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SPECIAL FEATURES

THE SCHNEIDER CUP RACE

AIRCRAFT INDUSTRY'S NEEDS

THE ATTAINMENT OF HIGH SPEEDS

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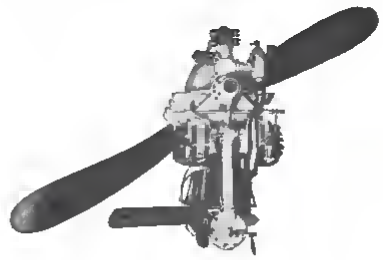

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NOVEMBER 2, 1925

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Speed Supremacy

ONCE more, the laurels have been placed on the victors after American speed classics. On land and over water the aircraft have demonstrated speed possibilities that even to the most optimistic seem to be approaching the limits of military usage if not the imagination.

The Schneider Cup, once more, is to bear the name of an American pilot. One more such inscription will make the trophy a permanent treasure of our national aeronautical museum that some day will be erected to enshrine the mementoes that have been gathered along the path of aerial progress.

Closer acquaintance with the purposes of the donor of this greatest international trophy and the tendency that the contests have taken lend to some future problems that will have to be considered, and it is hoped satisfactorily solved, before the race in 1926.

The three qualities required of an entrant for the contest are, navigability, which is tested by short flights and taxiing, watertightness and staunchness by a six hour mooring and finally speed. It is evident that to secure any one of these to the maximum requires a sacrifice of the other two. Compromises have to be made and as speed appears to be the one quality that secures the greatest encouragement and rewards, it has become the more important. Navigability and weathering qualities have been left to the chance of fair weather and postponement by the committees in charge. At Baltimore, where rain and wind played havoc with the temporary tent shelters, the great distance that seaplanes for racing purposes have gone away from practical and useful types of aircraft was apparent.

If seaplanes cannot mingle with the elements that are associated with the sea, they become mere streaks of sky speed. After the race, there were many opinions expressed as to the requirements that should be adopted for future competitions. While the losers were reluctant to suggest any modifications that might appear to make the recapture easier for them, it was evident that there appeared to be a unanimity of opinion that greater stress should be laid on the preliminary tests than on a continuation of a mad race for greater speeds.

Zephyr

THE symbolism of the Schneider Cup did not apply to the condition at Baltimore. Zephyr kissing the Spirit of the Waves was quite properly placed in a glass case. It is the only place it would have been safe. At Bay Shore Park he would have met all his boisterous relations cutting all manner of capers with his devotees.

The Baltimore Flying Club met every requirement of the N.A.A. Contest Committee and the accommodations provided would have been adequate for normal conditions, but with the Indian Summer on a rampage and seaplanes that were made only to get their footing from below, housed in temporary tent hangars, the officials had many unhappy moments.

The Baltimoreans, last year, made such a brave effort to give an exhibition of good sportsmanship, when the international competitive element had been taken out of the 1924 Races by the accident to the Gloster entry, that they were entitled to the contest this year. It is not at all improbable that the possibility of caring for seven entries with substitute planes was not anticipated. The local officials at Baltimore are themselves the most insistant that any future Schneider Cup Race planned in this country be held only from a permanent base where hangar and repair facilities are available.

The foreign contestants, while in constant fear for their aircraft and witnessing rain soak the tents and flooring day after day, maintained a cheerful sportsmanlike attitude, which should be given full credit.

Inspection of Commercial Aircraft

THAT the discussion of aviation questions will form a large part of the program of activities of the 69th Congress, when it convenes in December, is now beyond any doubt and the favorable revision of many present conditions will be watched for closely. Just what is to happen to action on legislation in civil and commercial aviation, is still somewhat doubtful, more especially so as a result of the recent inquiries into air questions of a more immediately important issue. Eventually, however, the problem as to what course should be taken in the effort to place commercial aviation upon a sound and reliable basis, will finally have to be answered.

The greatest diversity of opinion in this problem is undoubtedly on the question of inspection of commercial and civilian aircraft, for, while it is realized that adequate inspection is, in aircraft, just as in the cases of other vehicles of transportation, a necessary means of promoting safety of operation, it is also apparent that a faulty application and an exaggerated system of inspection may serve only to stifle progress, not only directly but also through the agency of the added operating expenses.

Not only can official inspection, incorrectly applied, be the cause of hindering progress as a result of the inherent complications in a system of operation, but in Europe, where civil and commercial aviation has been under official control, as far as inspection is concerned, for the past six years, it is claimed that the costs of operation, have, as a result of certain official methods and systems, been increased by as much as 80 per cent.

The pros and cons, therefore, of these important questions, which must soon be answered, call for careful weighing, in order that a policy, which is both conservative, from the point of view of safety and reliability, and yet farsighted, from the standpoint of the inevitable future progress, may be formulated and put to function successfully.

The Greatest Seaplane Contest

The Jacques Schneider Cup Won for Second Time by United States

The most interesting race ever held in the United States was the contest for the Jacques Schneider Cup held at Baltimore on Oct. 26, which was won by Lt. James Doolittle of the Air Service at the astonishing speed of 232.573 m.p.h. A comparison of the records made this year and last year gives the great gains that have been made in one year's progress.

	1924 Lt. Ofstie	*1925 Lt. Doolittle*	*Increase*
50 km.	176.25 m.p.h.	223.157	46.907
100 km.	176.822 m.p.h.	234.752	57.930
200 km.	178.250 m.p.h.	234.355	56.105
350 km.	187.083 m.p.h.	232.573	45.490

As will be seen from the comparative figures the increase is even greater than was thought to be possible with seaplanes. Further comparisons will show how remarkable this speed is. Last year, Lt. George Cuddihy set a new world's record for 3 km. at 188.82 m.p.h., which is 43.753 m.p.h. slower than Lt. Doolittle's speed for the 350 km. course. Early this year, Henry Biard in the Supermarine-Napier S4 Monoplane "mystery ship" set a new world's speed record for 3 km. of 226.7 m.p.h. or 5.873 m.p.h. under Lt. Doolittle's time for the entire 350 km. Schneider Cup course.

Gloster-Napier III Makes Fine Showing

Turning to the winner of second place, Capt. Hubert S. Broad, in the Gloster-Napier III and making comparisons, a most interesting as well as promising performance will be noted. When it is considered that the Gloucestshire Aircraft Company has specialized on land planes exclusively and has only built seaplanes for these races and that this was its first appearance in seaplane races, the speed made is almost as impressive as that of the winner. The speed for the 350 km. for Captain Broad was 199.169 m.p.h. This should be compared with the 1923 British entry at Cowes where Capt. H. S. Biard in a Supermarine "Sea Lion III" made a speed of 157.17 m.p.h. It will be seen that British seaplane design has in the two years that have elapsed since the last race, increased the British speed for the race, 42.059 m.p.h. It is proper also to note that the speed is also faster by 21.789 m.p.h. than that made by Lieutenant Rittenhouse, the American winner at Cowes in 1923 and 10.349 m.p.h. faster than Lieutenant Cuddihy's speed at Baltimore last year when the course was flown, but not in competition. It will be seen that the Gloster-Napier entry this year made a speed that would have won any other Schneider Cup race and would have broken all previous world's records.

Flying Boat Speeds Exceeded by Macchi

The Macchi flying boat entry that finished third, piloted by Giovanni de Briganti also made an impressive showing when its speed of 168.444 is considered by making comparisons with previous flying boat records. It is well to remember that before the Curtiss pontoon type of racing seaplane astonished Europe at Cowes in 1923, the flying boat was considered the only type of seaplane that could withstand the navigability, watertightness and speed requirements of the Schneider Cup contest. Therefore, it will be seen that the Macchi monoplane flying boat this year exceeded the speed of the British Supermarine aircraft of the same type in 1923 by 11.274 m.p.h. It was 22.444 m.p.h. faster than the British seaplane winner at Naples, Italy, flown by Captain Biard in 1922, and 51.044 m.p.h. faster than a flying boat of Macchi manufacture, that won at Venice in 1921. On the second lap of the race at Baltimore, de Briganti went several miles out of his course through a misunderstanding of the location of the stake boat which reduced his true speed for the course. It will therefore be evident that the Macchi, although it appeared to have been a poor third, was in reality achieving a great triumph for the flying boat type of aircraft.

Lt. James Doolittle being towed to the Pier after having won the Schneider Cup at the record breaking speed of 232.573 m.p.h.

Lt. Doolittle telling Lt. Cy Bellis how he won

Comparisons Show Progress

It is only when the race is considered by comparisons such as the above that the real significance of this year's competition can be understood, and it has therefore been discussed before a description of the race was given.

Going back to the preliminaries of the speed section of the race, the events of the morning of Monday, October 26th, should be recorded in detail for they had an important bearing on the final results of the race. Bert Hinkler, the reserve pilot of the British team had been given an opportunity of making his navigability test on the morning of the race, the delay being caused by weather conditions. While this delayed start was protested by the Italian team informally, the Contest Committee decided to permit the trial and consider the validity of protests later. Previously, the Italian pilots, as will be seen in the account of the Friday navigability tests had shown their excellent sportsmanship by agreeing to waive technicalities and permit Hinkler to postpone his trial until Saturday morning, but when two days went by they foresaw a possibility of complications arising in the future by the precedent, and wished to have a definite ruling made which would make the competition fair for all entrants.

Hinkler Encounters Rough Water

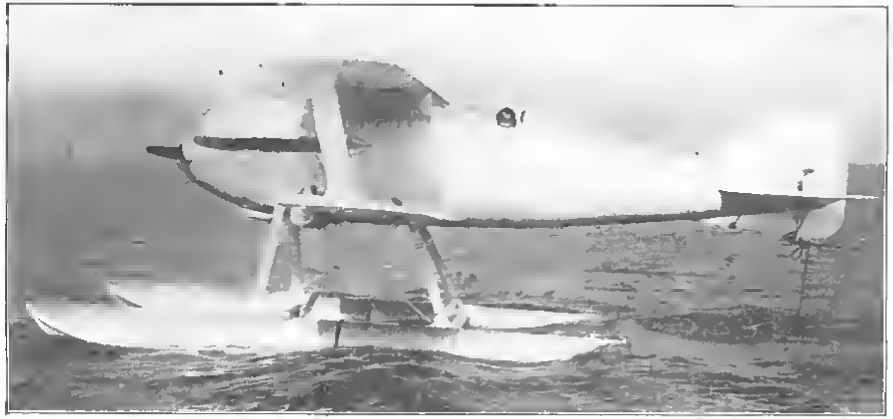
At daybreak, Hinkler, for the third time started the course. The Contest Committee, judges, and stake boats had shown their desire to do everything possible for the contestants by being at Bay Shore Park, where the meet was held, and in their positions for the third morning. In some cases it required that members of the Contest Committee leave Baltimore at 3 a.m. The gale of Sunday had moderated but Chesapeake Bay was still being ruffled by the waves that had wrecked 17 Navy Seaplanes, the day before. The visibility was very low also, but as soon as it was light enough to see the marks, Hinkler in his reserve Gloster-Napier was slid down the runway into the water. As he was required to fly the five mile course twice, land twice, and taxi two stretches of half a mile each before being moored for a six hour watertightness test, all before 2.30 p.m. he figured that he would have only until 7 a.m. to make the preliminary flights.

The small protected water area near the shore was smooth enough and he took off easily and flew out about a mile to the starting line. There he saw that the water was very rough but rather than be considered a "quitter" he landed. The boats that had gone out to observe his test were rolling heavily. He made a perfect landing but as he skimmed the waves the seaplane got one or two bad shocks which bent one of the struts making the undercarriage structure collapse. The fuselage sank down and was supported by the cross members between the floats. Hinkler sat in his cradle, disheartened because of his hard luck, until he was picked up and his plane towed back to the hangars by a rig from the Navy tender Shawmut. This accident had scratched the second of the three British entries.

One Macchi Has Engine Trouble

By ten o'clock, all the remaining contestants were testing their motors and getting their planes in readiness for the afternoon race. No difficulty was experienced by the three American Curtiss planes, nor by Captain Broad with his Gloster-Napier III, but when the Macchi engines, (Curtiss D12s) were started it was seen immediately that one was not functioning properly. As the rules of the race required that all engines be sealed at the time of the navigability trials and no repairs or adjustments can be made to either planes or motors, there was a great bewailing of their misfortune by the Italian party. Ricardo Morselli who had become very popular by his quiet and unassuming manner and who was to pilot the flying boat, the engine of which had gone wrong, went to the hangar and could not hold back the tears, his sorrow was so great over losing his opportunity to compete. As the plane would have been disqualified had the engine been adjusted, the Italian team left it to its fate and gave its full attention to the remaining Macchi entry. For this reason, the

Above—The Macchi seaplane flown by C. de Briganti taking off across the starting line
Below—Captain Broad taxiing the Gloster Napier III before the Race



The Gloster Napier III flown by Capt Broad in the Schneider Cup race at Baltimore Winner of second place

cause of the engine trouble was not determined but undoubtedly it was ignition difficulties, possibly spark plugs or magneto.

It either in both of these two unfortunate planes had remained in the race the order of the finish of the first three second and third place might have been changed. The five remaining planes were put in the water about two o'clock and prepared for the start.

Perfect Weather

The weather was ideal for the race. The entrance of the waters off Bay Shore when the starting gun was fired at 2:30 p. m. was choppy. The sun shone brightly and glistened on the shining planes.

A squadron of Navy planes flew in formation over the heads of the spectators. Lt. Frank H. Conant, alternate Navy pilot for the Schneider Cup Race, thrilled the thousands with spectacular stunts in the pursuit plane used in the trip to Baltimore by Lt. Cyrus Bettis, winner of the Pulitzer Air Race at Mitchel Field a few weeks ago. The TC-5, a United States Army airship from Akron, soared over Bay Shore

D. Langdon, builder of the Gloster-Napier III

H. P. Folland, designer of the Gloster Napier III

Mrs. William E. Gilmore, Lieut. Donald Duke, aide to General Patrick, Mrs. W. A. Moffet, wife of the chief of the navy Bureau of Aeronautics, and her daughter, Miss Jeanette Moffett.

All the members of the teams with the designers of the planes were busily engaged while the crowd that had swelled to about five thousand crowded to the pier.

Lieut. Cyrus Bettis, winner of the Pulitzer Race this year, roamed through the crowd. He was in flying clothes, ready at

The Macchi Flying Boat piloted by Giovanni de Briganti that won third place in the Schneider Cup Race

the instant to replace Lt. Doolittle in an emergency. In fact, for several days Bettis had practically played the part of mechanic to Doolittle. It was remarked by many of the visitors that these two lone Air Service representatives surrounded by Navy pilots, mechanics and ground crews, were more observed by their businesslike modest bearing than any of the other flyers.

About noon two men walked slowly into the hangar area. Neither was cognizant of the other's presence, neither was in uniform. As they strolled about, the crowd, interested in the arrival of the army "blimp" TC5 and a parachute jump a short distance inland, paid no attention to them.

Distinguished Visitors

One of the men, in a brown fedora and heavy overcoat, approached a sailor and asked directions to the hangar where lay the wrecked Supermarine Napier, with which the British had hoped to win the race. The sailor snapped a salute. His action drew attention to the group. There was a rush to shake hands with and to congratulate Commander John Rodgers.

Then Commander Rodgers saw the other man, Lieut. C. M. Shur, United States Navy, who accompanied MacMillan on his recent trip to the Arctic and effort to reach the north pole by airplane. Commander Rodgers and Lieutenant Schur spent an hour together "comparing climates."

The launching of the seaplanes proceeded with no excitement. The winning plane was the first to be launched. The two Navy planes soon followed. The British plane then was pushed into the water. Some time after this the Italian plane went in.

The Start

The conditions of the course had by this time become as nearly perfect as could be desired, the water was choppy, but not rough, the wind from the right direction and the early morning haze had burned off. Promptly at 2:30 Lt. Doolittle left the hangar position and taxied to the starting line. As he reached rougher water, spray was thrown up on all sides making it appear that he was going to have difficulty in taking off. He was allotted the five minute period from 2:35 to 2:40 in which to take the air after taxiing across the line. Just at mid-time he gave his engine the throttle and made a perfect take-off. At five minute intervals he was followed by the Captain Broad in the Gloster Napier III, and Lts. Cuddihy and Ofstie in their Curtiss racing seaplanes. Giovanni de Briganti followed in his Macchi flying boat. All made their take-offs easily before their time periods had expired. The low hung monoplane wings of the Macchi, having only a two foot clearance above the water, gave the crowd a thrill by its long run before taking the air, but de Briganti handled his seaplane masterfully.

By this time "Jimmy" Doolittle had become the hero of the crowd. He had made his first lap in 223.157 m.p.h. from a taxiing start. His flying was just what was to have been expected from the pilot who always gives air meets in his PW-8 an exhibition of stunt flying that excites the greatest admiration. He cut the pylons at almost a vertical bank with his engine apparently running full out. The only other pilot that ventured to make such tight turns was de Briganti, who of course was not flying at such a high speed. Those in the Judge's enclosure that knew how easily a pilot could, by making such a turn lose consciousness, marveled at Doolittle's judgment in rounding the pylons so perfectly that he was able to keep his head clear every moment.

An Exciting First Lap

With a new world's record in sight all eyes watched the British contender, Captain Broad. When his time for the first lap, 194.275 m.p.h. was announced, it was felt certain that, barring accident, the Schneider Cup would remain in the United States another year. With Captain Broad off on his second lap, the interest centered on Lt. Cuddihy, for the rivalry between him and Lt. Doolittle was the topic of greatest discussion for several days before the race. When his time of 211.590 m.p.h. was announced, the Navy contingent became silent and sad. A few minutes later, when Lt. Ofstie roared

Major Temple Joyce (left), Major William Tipton and T. T. Hildebrandt of the Baltimore Flying Club whose excellent work made The Baltimore Meet a success

Famous Pilots at Baltimore Left to right Lt Cy Bettis, Lt F H Conant, Lt George T Cuddihy, Riccardo Morselli, Lt Ralph A Ofstie, Capt Hubert Broad Giovanni de Briganti

past, new courage came to the Navy partisans, only to be lost when 207 959 m.p.h. was marked up. Both Navy pilots appeared to be taking their turns very wide and not flying as direct a course as Doolittle.

At this point it should be recalled that Lt. Ofstie was flying the famous "dogship" with the "ortess" engine in which the widely advertised time of 302 m.p.h. was made by Lt. Al Williams in one of those preliminary dashes that usually turn out to have wind and other elements mixed with speed. When the two engines for the Pulitzer races reached Garden City, Bettis and Williams flipped a coin for the choice of engines. Williams won and the Navy chose the engine that it considered the better. It was this engine that was flown by both Lt. Williams in the Pulitzer Race and Lt. Cuddihy at Baltimore. Lt. Doolittle was flying Lt. Bettis' Curtiss converted racer that won the Pulitzer Trophy.

Cuddihy and Ofstie Out

Toward the end of the race after it had become certain that Lt. Doolittle, barring trouble, would break all world's seaplane records, up to 350 km., the onlookers were again brought to a high pitch of excitement by the non-appearance of both Lts. Cuddihy and Ofstie at their due time. As the minutes passed, and no news came to the anxiously timers it became evident that both were down somewhere around the circuit. It was soon learned, however, that Lt. Ofstie had been forced down by engine trouble while making his sixth lap around the course. He landed five miles west of Huntingdon Point, the second pylon on the route, and was towed to the Bay Shore hangars. He was uninjured.

Lt. Cuddihy was compelled to abandon the race when the finish line was almost in sight. He was just about to complete his seventh and last lap when his motor became overheated through loss of oil and took fire. He put out the blaze with a small extinguisher and made a good landing, uninjured. He was towed to shore.

Doolittle Receives Great Ovation

By this time, Doolittle had finished and as he rounded the last pylon he zoomed up several thousand feet and everyone who had seen him fly wondered if in his happiness over his victory he was going to do some of his usual stunts. But he soon came down, made a perfect landing, and was towed to the pier and received the applause of the thrilled spectators who had seen as wonderful an exhibition of speed flying as has ever been witnessed in this country.

General Patrick, his wife and a host of friends, including the downcast Navy group, gave him a greeting that he will long remember.

de Briganti Becomes Rescuer

When de Briganti crossed the finish line he continued on his course instead of landing. It was thought at first that he did not know that he had completed his final lap because of a misunderstanding of signals and preparations were made to inform him when he came over the Judges' stand again. Carl Schurr, the excellent Contest Committee representative secured a large Italian flag and was ready to salute the Italian Ace from a point of vantage with a wave of the flag and "Viva d' Italia" in his best Italian. But the Macchi pilot did not return. Later it was learned that he had seen that Cuddihy and Ofstie were down far out on the 31 mile course and had gone to give them such assistance as he could render. Meanwhile, both Navy pilots had been taken in tow. De-Briganti in searching for them ran out of gas and landed where he had last seen Ofstie, believing him to be lost and desiring to indicate to rescuers the spot he thought the plane disappeared.

For this act of courtesy he was given an ovation when he appeared in Baltimore later, after having been towed to Bay Shore Park.

The Schneider Cup—symbolizing Zephyr kissing the waves

Broad is Congratulated

Captain Broad in his Gloster-Napier had flown a superb race. His time for every lap was so nearly the same that only a variation of two miles was shown. On his two fastest laps he made a speed of 201.474 m.p.h. which will be the British record for 100 km. The Napier engine of over 700 hp. had functioned perfectly through the 226.35 mi. course. As this is the first seaplane race that the converted Napier Lion engine was used in, H. T. Vane, the managing director of D. Napier and Son Ltd. who was present was congratulated warmly on all sides.

In fact everyone appeared to be extremely happy over the outcome of the race, except of course the representatives of the Navy, headed by the gracious and ever helpful Lt. Comdr. Homer C. Wick, Commanding Officer of Anacostia Naval Air Station and representative of the Bureau of Aeronautics at Baltimore. The designer of the winning plane, William Gillmore and Arthur Nutt the engine expert of the Curtiss organization were congratulated on all sides. D. Longden of the Gloucestershire Company and H. P. Folland the designer of Captain Broad's racer were cheered by the often expressed hope that they would come back next year and again make the United States enter its very best pilots and planes in competition for the premier international trophy. The Italian team were too downcast over the withdrawal of one of their entries at the last minute and the lack of knowledge of the whereabouts of de Briganti to receive their portion of the general congratulations until the evening festivities.

General Patrick beamed on everyone with his happy smile. With the Pulitzer Trophy and the Schneider Cup added to the list of achievements of his department, his appearance of delight could be well understood.

The captain of the British team Capt. C. B. Wilson and Col. F. H. Derby, Chairman of the Race Committee of the Royal Aero Club, after spending days of waiting for the rain, wind and fog to disappear, became the leaders of a group of Englishmen that radiated a spirit of infectious cheer.

Col. Derby, Chairman of the Race Committee of the Royal Aero Club and head of the A.D.C. Company

In general design the Gloster and the Curtiss racers were very similar. They were both twin float seaplanes and to the casual observer seemed very much alike. In the Curtiss racer the fuselage filled the entire gap between the wings, while in the Gloster a header tank for the water cooling system filled in the considerable space between the fuselage and the top wing. Viewed head on the Gloster looked like the smaller plane and was very chunky in appearance while the Curtiss gave the same impression when viewed from the side. Both planes with their extremely small spans and short fuselage looked top heavy and unstable on the water when compared to normal seaplanes. This impression is more of an optical illusion than an actual fact for by using a motor at high rpm and a metal propeller, the diameter of the propeller is no larger than in planes of lower horsepower, and the hub munch is the governing factor in the height of the fuselage and wings is no higher than in a torpedo plane.

SPEEDS ATTAINED AND FLYING TIME CONSUMED, BY LAPS, IN SCHNEIDER CUP RACE

The speeds attained and the flying time consumed, by laps, in the Schneider Cup seaplane race are shown in the following table. The upper figures show m.p.h. speed attained on each lap the lower figures the flying time, in minutes and seconds, for the lap.

Pilot	1	2	3	4	5	6	7	Total time	Speed for Course
Lieut. Doolittle	223.157	233.573	234.326	234.459	233.422	234.508	235.036	———	232.573
	8.21.20	7.58.85	7.57.31	7.57.04	7.59.16	7.56.94	7.55.87	56.06.36	———
Capt. H. Broad	194.275	198.637	201.536	201.412	199.776	199.644	199.086	———	199.169
	9.35.71	9.23.07	9.14.97	9.15.31	9.19.86	9.20.23	9.21.80	1.05.30.95	———
H. G. de Briganti	166.813	155.790	173.958	173.720	170.057	168.720	171.593	———	168.444
	11.10.49	11.57.93	10.43.32	10.43.83	10.43.83	10.57.70	11.2.91	1.17.27.99	———
Lieut. Cuddihy	211.590	221.128	222.217	223.081	222.571	222.584	———	———	———
	8.48.69	8.25.80	8.23.32	8.21.37	8.22.52	8.22.49	———	———	———
Lieut. Ofstie	207.059	219.246	218.980	223.033	223.041	———	———	———	———
	8.57.83	8.30.11	8.30.76	8.21.48	8.21.40	———	———	———	———

NEW WORLD'S RECORDS

100 km. World's Record ..... 234.772 m.p.h.
(Average of Doolittle's laps 6 and 7)

200 km. World's Record ..... 234.355 m.p.h.
(Average of Doolittle's laps 4, 5, 6, 7)

RECORDS FOR SCHNEIDER CUP

1913	44.7 m.p.h.	France	1921	117.4 m.p.h.	Italy
1914	55.3 m.p.h.	Gt. Brit.	1922	146.0 m.p.h.	Gt. Brit.
1919	124.9 m.p.h.	——	1923	177.38 m.p.h.	U. S.
1920	102.5 m.p.h.	Italy	1924	no race	
			1925	232.573 m.p.h.	U. S.

Curtiss and Gloster Compared

Close scrutiny revealed the fact that the Curtiss racer, at least externally was a much more finished product than the Gloster. The pontoon struts for example on the Curtiss run right into the fuselage and the fittings are all on the inside while on the rival plane the fittings were external and, though streamlined, offered more resistance. Control surface horns were external on the Gloster and internal on the Curtiss. The Lamblin radiators on the Gloster were fitted on the lower wings on both sides of the fuselage and though one of the most efficient of racing radiators they certainly do not give as clean an appearance as the wing radiators do. The Gloster tail was braced with external wires two of which were not even of streamline section. These and many other minor details which the Curtiss engineers have worked out through their years of racing experience probably account for a good deal of the difference in speed between the two planes. The duralumin pontoons on the Gloster plane were certainly a beautiful piece of work and externally at least they looked very simple in construction.

The Macchi monoplane aroused much interested comment. It was the most original plane which actually flew in the race and the details were beautifully worked out. The speed which the only flying boat showed was very much lower than the pontoon seaplanes but it must be remembered that it was considerably heavier than any of the other competitors and that the Italian plane was powered with one of the older types of Curtiss motors which probably develops a hundred less horsepower than the more recent models. It also used a wooden propellar. The handling of the plane in the air was a revelation to most of those present. The Italian pilot put the monoplane in a vertical bank on the corners and seemed to have perfect control at all times. His turns at the home pylon were as sharp as those of Lieutenant Doolittle. On the water, the flying boat seemed to handle surprisingly well though the wings were so close to the water that they would have been damaged by a really heavy swell.

The Beautiful Supermarine

The Supermarine racer which was crashed during the preliminary trials was one of the most interesting planes scheduled to enter. In general outline it followed the Ferbois racer which holds the world's speed record. The workmanship and finish of the plane was very fine and in the air it was the most graceful of the planes entered. Every one was disappointed that it could not participate in the race.

Lt. Doolittle Breaks 3 Km. Record —245.713 M.P.H.

Lieut. Jimmy Doolittle, champion aquatic aviator of the Army set his fourth world speed record for seaplanes at Bay Shore Park by flying four times over a measured 3 km. straightaway at an average speed of 245.713 m.p.h. The performance officially eclipses the former British mark of 228 m.p.h., although Doolittle actually shattered the latter on Oct. 26 on a closed triangular course when he won the Schneider Cup Race at an average speed of 232 m.p.h. for 350 km.

The record was established with the same black and gold Curtiss Racer in which Doolittle defended the Schneider Trophy against the English and Italians. It is the plane in which Jimmy's flying partner, Cy Bettis, won the Pulitzer Trophy Race at Mitchel Field Oct. 14.

Officially Timed

The flights were timed by Odis A. Porter, veteran of many airplane and automobile meets, with the assistance of B. Russell Shaw, both being official representatives of the National Aeronautic Association. Elaborate electrical timing devices were employed and the results will be certified to the Federation of Aeronautique Internationale, with headquarters in France, the international body which is the supreme authority in records of the air.

Under conditions laid down by this organization for the 3 km. speed tests, Doolittle was required to fly over the course both ways, leveling out a half kilometer back of each starting point and maintaining a constant altitude of not more than fifty meters throughout the lap. A diving approach from 1,300 ft. is allowed, and Doolittle took advantage of this.

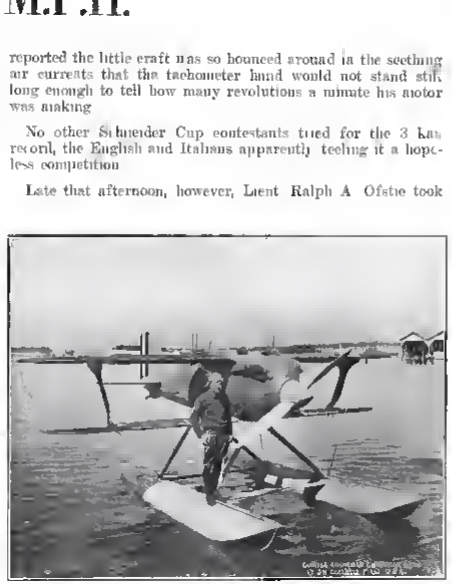
He made four round trips over the course, and his speed was averaged on the four best consecutive laps. The best single lap gave him an average speed of more than 248 m.p.h., but on it the high cross course breeze gave the speeding racer a little help. Doolittle flew the course with the same cool and steady accuracy that marked his technique in the Schneider Cup race, but while that event the straight flying was not spectacular.

Air Was Bumpy

It was apparent to those watching that the air was extremely rough and bumpy. Jimmy verified this when he landed, and reported the little craft was so bounced around in the seething air currents that the tachometer hand would not stand still long enough to tell how many revolutions a minute his motor was making.

No other Schneider Cup contestants tried for the 3 km. record, the English and Italians apparently feeling it a hopeless competition.

Late that afternoon, however, Lieut. Ralph A. Ofstie took



Lt. James Doolittle on his Curtiss racer that broke all world's seaplane records up to 200km. at Baltimore.

off for Philadelphia in one of the two Navy racers, both of which developed engine trouble on the 26th. He was followed into the air by Lieut. Frank H. Conant, pilot of the Navy standby plane which was to have served as an alternate in the Schneider race. They were to turn their planes over to the Naval Aircraft Factory.

The Preliminaries of the Schneider Cup Race

Navigability and Watertightness Tests Arouse Great Interest

THOSE who had the privilege as well as the farsightedness to attend the preliminary tests required of all entries for the Schneider Cup Race were rewarded by experiencing what may be classed rightfully as one of the most interesting, if not the most interesting exhibitions ever held in this country.

Not only were the weather conditions perfect, but the absence of arm bands, barges and guards and the complete freedom of access to all of the beautifully designed racing seaplanes were innovations that hold great promise for future meets.

The group that had assembled at Bay Shore Park, an amusement resort in the summer but by Oct. 23 put in winter wraps, was the greatest gathering of international air celebrities ever seen in this country. Orville Wright with his friend Griffith Brewer of England looked over the aristocratic descendants of his Kitty Hawk, sire of all aircraft. From England came R. C. Fairey, of international fame as designer and builder of aircraft bearing his name. A. V. Roe was there receiving introductions to many who had flown Avros both here and abroad. D. Longden, Managing Director of the Gloucester Company, builder of the two Gloster-Napier IIIs was watching the preparation of his entries. He showed with much feeling a letter that he had just received from his disabled test pilot Larry Carter and sympathetically expressed the wish that he might have been present to witness the superlative racing machines at Baltimore.

Notables Present

H. P. Folland, the designer of the Gloster Napier III was directing the preparations for the day's testings. Only one of his seaplanes was expected to be in the race at this time as the Royal Aero Club had for some unknown reason failed to make provision for three participants. The British team had nine planes with them and three could have been entered as well as two. But Mr. Folland merely smiled and pulled on his current pipe.

R. J. Mitchell was grooming the Supermarine Napier S4 in which Capt. H. C. Biard was to meet misfortune later. These two quiet men designer and pilot were the only representatives of the Supermarine that came to the races. The daring design of the Supermarine made the Mitchell entry the center of greatest interest.

Capt. Wilson and Col. Derby of the British team were advising with Maj. J. S. Buchanan, the technical representative of the Air Ministry, whose Scotch humor was always adding a pleasant smile to every group that he was in.

H. T. Vane, Managing Director of the Napier Company and W. L. Jackson, engine expert kept themselves busy listening to the 700 hp. Napier engines that were used in all the British entries. F. H. Jones, publicity manager for Napier, was an unfailing source of information regarding the British team.

In the Italian corner of the station, Sig. Macchi wooing and serious was being assisted by Comdr. J. L. Callan, U.S.N. who acted as liaison officer and interpreter for the Italian team. Commander Callan was the busiest person at Bay Shore Park in his efforts to assist the Macchi representatives to understand the ever changing conditions.

Sig. Silvio Scarone, the Italian Ace, with thirty official victories to his credit, now the Italian Air Attaché in Washington was helping his countrymen to prepare for the navigability tests.

Group Capt. C. M. G. Christie, the British Air Attache was watching carefully over the Air Ministry's contestants. M. Louis Breguet, the French Constructor, whose day bomber won at Mitchel Field announced that he hoped to enter a seaplane in the contest next year. Others seen were C. M. Keys, Grover Loening, Glenn L. Martin, Wm. Gillmore, Arthur Nutt, C. M. Waite, Chance Vought. But from the list already mentioned it will be seen that the small group of watchers were most representative. The rules governing the two days' events are printed below:

General Conditions for 1925

Article 1. Clubs entering machines must deposit, in addition to the entry fee held down in the General Regulations, a sum of 5,000 francs (French) for each machine, as a guarantee of its being present. Entries close April 1, 1925.

Machines fully erected must be submitted to the Contest Committee at a place to be designated not later than 10 a. m. on the day preceding the navigability and watertightness test. The deposit of 5,000 francs per machine will be returned in respect of all machines submitted as above.

Navigability and Watertightness Test

Article 2. This all important trial will begin Oct. 23, 1925, with a navigability test followed by a watertightness test. These two tests are intended to establish the seaworthiness of the machine.

Article 3. Each machine must complete a course of from 5 to 10 nautical miles over the sea, be in a creek, gulf estuary, or bay, as decided by the Contest Committee.

For this test the pilot must taxi over the starting line, turn and continue the course during which he must taxi the machine over two distances of one-half a nautical mile at a minimum speed of 12 knots, the limits of each of these distances being indicated by two buoys.

The remainder of the course will be covered in flight.

The pilot must, however, alight again before completing the course and taxi over the finishing line.

The Contest Committee may allow a pilot who has been unsuccessful in the test to make a second and final attempt after all pilots have had a first attempt.

Article 4. After having taxied over the finishing line, the machines must be moored immediately in a buoy allotted beforehand where it must remain afloat for six hours without anyone on board.

Any machine leaving its moorings during this period will be disqualified.

Article 5. No repairs will be allowed during the navigability and watertightness tests. Except for changing the propeller, which is allowed, the machine must not undergo any modification between the above tests and the speed contest. It will be stamped or sealed to ensure this.

Speed Contest

The 1925 Inaugural Schneider Cup Race will be held at Bay Shore Park, Baltimore, Md., and will be contested over a distance of 350 km. (188.88 nautical miles).

The speed contest will take place on Oct. 24, 1925.

Pilots may be elected all together or at intervals as shall be decided by the Contest Committee.

If the planes are started at intervals the order of starting shall be drawn by lot and the hour of starting fixed by the Contest Committee.

Prominent Airplane Manufacturers of Baltimore watching the seaplanes in the Schneider Cup Race. Left to right, Glen L. Martin, C. M. Keyes, Grover Loening, and Louis Breguet.

The starting line must be crossed on the water at which time there must be contact between the water and the principal floats or floats supporting the machine The finish line must be crossed in flight

Planes must not leave the water until after crossing the starting line Any plane re doing is subject to disqualification

Starting time will be taken from the moment the starting signal is given by the official starter

Pilots are at liberty to have the assistance of motor or row boats during a pre minute period prior to the start while in a reserved area, but all such boats must leave the reserved area immediately after the starting signal No strikers buoys sea anchors or any similar devices may be used either by the pilots or their attendant craft

Alightings during the Speed Contest are allowed.

Repairs are permitted but must be carried out by the crew on the water by means of what is or board without receiving any outside assistance The machine may however anchor moor or manoeuver under its own power but must not be towed.

Fuel replenishments are not allowed except from stores carried or board

Or completing the course the pilots must submit their machines to the Contest Committee at a place to be designated for the checking of all stampers and any other procedure considered necessary by the Contest Committee in order to ensure the carrying out of the General Regulations for 1925

In the event of unfavorable weather the Contest Committee may postpone the contest as often as they think fit

Supplementary

Every person taking part in a sporting event of whatsoever nature is required

To know the sporting regulations (F A I Rules) thoroughly (2) To agree to submit without restriction to the consequences that result therefrom" (F A I Rules Art 9)

A competitor by entering waives any right of action against the race committee for any damages sustained by him in consequence of any act or omission on the part of the officials of the said committee or their representatives or servants or other fellow competitor

The machine shall at all times be at the risk in all respects of the competitor who shall be deemed by entry to agree to waive all rights for injury either to himself or his passenger or his machine, or his employees or workmen and to assume all liability for damage to third parties or their property, and to indemnify the race committee in respect thereof

The Start of the Tests

By 9 1 m Lieutenant Ofstie left the runway and in a few minutes took off on the first test of the day By 9 15 de Briganti was ready, the order of leaving for the day's tests having been arranged the day before by an impartial drawing By 9 16, Ofstie had started on his second hop after having taxied a half mile De Briganti was the center of interest as he skimmed the surface with his low hung monoplane Macchi flying boat After waiting for the water to quiet from the wash of a speed boat, he took the air and circled the starting line

By 9 20 Lieutenant Ofstie had landed and was towed to his mooring, the first entrant to complete the navigability test. Four minutes later Captain Broad left the hangar area and at 9 32 took the air. His stunt was beautifully made and caused much favorable comment As this was the first opportunity the visitors had of seeing the Gloster-Napier in the air, Captain Broad's flying was keenly observed Soon it was seen that de Briganti had landed with a dead stick As he had not crossed the line he was towed back to the runway

The Supermarine Crashes

The arrival of the Supermarine-Napier S4 on the runway centered everyone's eyes on the graceful lines of the British "mystery ship" The little gasoline engine starter that the Napier engines used was wheeled into position, the tubes connected and within a few moments it had turned over the engine so that it started with a roar, the 700 hp. giving forth a challange that the Americans understood

Captain Biard, a former winner of a Schneider Cup Race was in the cockpit and at 9 45 he took the water After taxiing out to the starting line, the Supermarine took off with a short run on the water and for the first time the Americans could observe their most feared contestant It was known that this seaplane was capable of 226 7 m.p.h over a short stretch so that its navigability was the only thing about it that was uncertain.

Captain Biard, who had been kept indoors for several days with a cold flew the blue and white monoplane over the pier and hangars making steep banks on the turn. He was seen to put the seaplane into a right hand vertical bank and then immediately into a left hand vertical bank The observers from the ground suddenly realized that something was wrong for the machine appeared to stall and sideslip first one way and then the other from about 500 ft After a half dozen of these right and left wing ups and downs, Captain Biard appeared to lose control completely and dropped about a hundred feet, pancaking into the bay A great splash of water concealed the wreck and everyone on the shore was saddened over the probability that the pilot had been hurt Captain Biard, who had by this time finished his navigability test, taxied over to his teammate and was the first person to reach the wrecked plane He waved to the rescue boats that Biard was not hurt and in a few minutes everyone was made happy to see the unfortunate pilot land at the pier and walk, wet and downcast to a waiting ambulance which took him to a place where he could rest and get dry clothes

It was announced officially by the British team that the cause of the accident would appear to be that the machine was stalled coming out of a steep turn at a height which did not leave the pilot sufficient room to regain control The structure of the airplane had been carefully examined and there was no sign of structural failure at all or was there any question of the wings having fluttered or engine trouble.

All the competing teams offered their congratulations to the British contestants on the rescue of Henry Biard and greatest regrets over the loss of the favorite from abroad

Doolittle's Great Flying

Soon afterward de Briganti and Lieutenant Doolittle took the water for their tests Morselli also started his trials The take-off and landings of Lieutenant Doolittle caused him to become a favorite for first honors On landing, he would just let the rear of his pontoons touch the water and instantly he would straighten out and come to a stop It was the most perfect demonstration of flying seen during the day

Soon there were five planes moored. Lieutenant Cuddihy had broken a landing wire and had to make a replacement which arrived in time for him to fly the course by four o'clock His flying was also of a kind that made it appear that his race with Lieutenant Doolittle would be the feature of the race

Hinkler Permitted to Delay Start

The Gloster-Napier replacement plane was made ready and Bert Hinkler took off about five o'clock He flew for a few minutes but soon landed with a broken landing wire As it was too late to replace it before dark a request was made to the Contest Committee for an opportunity to make the test on Saturday morning before the speed contest After consulting with the teams a waiver was prepared and Hinkler was given another chance The waiver indicates the good sportsmanship that prevailed It read as follows

October 23 19_5

We, the undersigned being and constituting all of the contestants and/or entrants for the Jacques Schneider International Seaplane Race for the year 1925 hereby agree and consent that the general regulations be construed so as to permit the British Replacement Plane No 4 to make its navigability and watertightness test on the morning of Oct. 24, 1925, provided said test is completed in time for said plane to start in its regular assigned order in the races to be held on the afternoon of Oct 24, 1925

We further hereby waive all right to contest the correctness of this construction of the general regulations governing said race.

In witness whereof we have hereunto subscribed our hands this day and year first above written.

J. H Doolittle U S Army
Ricardo Morselli Pilots Italian
Giovanni DeBriganti Pilots Italian
Silvio Scaroni For the Italian Aero Club
H C Wicks, Lt Comdr U S Navy
for Lieutenants Cuddihy and Ofstie U. S. Navy

On Saturday morning Hinkler tried again but the water was so rough that he could not even get off, the waves being blown from the bay by a gale that later wrecked the Navy's 17 visiting TS planes

The moored planes had all successfully finished their navigability tests and were safe in their hangars before the rain and wind became dangerous. The spectators had witnessed the finest exhibition of water flying and seaplane testing that had ever been witnessed in this country

The Aircraft Industry's Needs

Gives Air Board A Unanimous Recommendation for Improving Conditions

CHARLES L LAWRANCE presented the report to the Air Board on Oct 12. In introducing the recommendations he said

"After receipt of your letter signed by Dr Durand as Secretary, requesting a statement from the Aeronautical Chamber of Commerce, regarding certain phases of the aircraft industry in relation to national defense and to the various Departments of the Government, I, as President of the Aeronautical Chamber of Commerce, called a meeting to give consideration to the subject Invitations to this meeting were sent not only to the manufacturing members of the Chamber, but to the entire list of constructors of aircraft and aircraft motors in this country

"The response to this call was very general and the meeting was duly held in New York on Sept 30. It was the unanimous opinion of the twenty-four representatives of the industry present, after a thorough discussion, that the most satisfactory and effective presentation of the views of the industry that could be made would be through the presentation of a brief concise letter outlining the thought and wishes of the industry covering the various points at your inquiry

Charles L. Lawrence

"Accordingly, a special committee was immediately and duly chosen by resolution, with authority and instructions to prepare such a letter in the form of a statement addressed to your Board. This Committee promptly met and organized In the following week a number of other meetings were held and on Oct 6 they submitted a draft of the letter that they had prepared to all of the individual manufacturers

"At the same time I called another general meeting of the industry to be held on Oct 9 In this call, I requested that representatives of the individual companies attend, prepared to give final consideration to the questions in hand and with authority to sign the letter before transmitting it to your Board The latter meeting was duly held on Oct 9 It was attended by twenty representatives of the individual manufacturing plants and the draft of the letter that had been prepared was thoroughly considered and after discussion, unanimously approved and signed by the representatives of all the Companies present

"In approving the letter, all of the men present expressed a great sense of satisfaction not only with the manner in which the work of the Committee had been done, but in the fact that we are able to present to your Board evidence of solidarity within the industry and also evidence of the fact that at the present time our opinions, in reference to these matters, are shared and supported by the War and Navy Departments It is felt that these facts offer great promise, not only for satisfactory future progress within the industry, but also toward the solution of the most bothersome questions that in the past have interfered with or hampered the Government in their procurement of aeronautical equipment

"It should be said in connection with the above, that our ability to promptly reach this result through a very intensive study of the entire subject that has been carried on within the industry and in conferences with the War and Navy Departments for over a period of a year, I desire to give a brief statement of that work

Closer Government Cooperation

"At the end of 1924, a general meeting of the entire industry was called for the purpose of studying these problems At that meeting, by formal resolution, a Special Committee of the Industry was appointed with the instructions and authority to determine what should be done to develop a sounder policy within the industry, in order that through closer cooperation between the Government and the industry, there will be brought about improved relations that would insure the safe and economic expansion of the industry, the development of military and commercial aviation and at the same time provide the essential qualities for the production of aircraft to meet all the needs of the Nation

"At the instance of President Coolidge, a joint conference was promptly arranged with the Secretary of War, the Secretary of the Navy and the Special Committee of the Industry, during which all of the underlying problems were discussed in detail and at length At the end of this conference, we were invited to the White House for a short conference with President Coolidge, for the purpose of submitting to him in person a brief report of the progress that was being made

A Settled Policy

"Following suggestions that were made during the latter conference, a study of questions of detail were taken up by the Committee with the Assistant Secretary of War and the Assistant Secretary of the Navy and the Chiefs of the Aviation Services of their respective Departments As a result of these later conferences there was finally developed a statement of policy that was finally unanimously approved and accepted by the services and the industry

"This important work occupied a great deal of time over a period of months It covered the most thorough, careful and serious study of all of the problems The result of this work made it possible for the industry to promptly and effectively respond to your request and to appear before you, as we now do, with a statement incorporating these approved principles with unanimous and formal endorsement of all the companies manufacturing aircraft, who have signed it. With your permission, I now present this letter and request the privilege of reading it to you"

Recommendations of the Industry

Replying to your letter of Sep 28, signed by Dr W F. Durand, Secretary of the Board, we beg to say that representatives of the aircraft industry have agreed upon certain points which can be presented to your Board as coming from the industry, and as representing views of all of the members of the industry whose names are signed to this letter

Replying specifically to some of the questions in your letter of Sept. 28, we beg to answer as follows

First The present condition of the industry as to types of planes, number of planes, number and classes of men employed and suitability of men from other industries for this type of work was covered very completely and in great detail in a survey made by the Industrial War Plans Division of

the United States Army, after a conference with the Navy, in the spring of 1925. The data for this survey was furnished by the individual companies and was compiled very carefully. We believe that it will answer fully your questions, and since it is not more than six months old, we do not believe that anything will be gained by our repeating this work in the short time available in which to do it.

Maj. J. A. Mars of the Army Air Service, who carried out this survey and who displayed great skill in doing this work, has recently been transferred from the Industrial War Plans Division. We believe, however, that you will be able to obtain all the data necessary from that source.

Second. The question as to what would be necessary in order to convert the present industry from a peace time basis to a war basis, in the event of a national emergency, was, we believe, covered by the Industrial War Plans Division in this same survey. In fact, the survey was made for the express purpose of furnishing a satisfactory answer to that question.

Third. In response to your request for suggestions of means to put the industry on an adequate peace time basis, so that it would be readily available for the Government's need in the event of a national emergency, the suggestions which the undersigned members of the industry unanimously desire to offer, are the following:

(a) Secure continuity of production:

That a policy of procurement be adopted by all the departments of the United States Government who use aircraft, to the end that there may be a certain amount of continuity in the placing of orders for such material, with such plants and organizations as have maintained or created good and adequate facilities for design and engineering development and the construction of types required.

This policy of continuity, if carefully worked out and constantly applied, would, we believe, go far toward correcting the conditions that have at times worked great hardships to most of the members of the industry and have limited the growth of the plants and the engineering facilities of the country.

(b) Stop direct competition of Government owned plants with the industry:

Throughout the whole period since the war there have been many occasions when members of the industry have met sharp competition from plants owned and operated by the Army, the Navy and the Post Office. While recently there have been praiseworthy efforts on the part of the Government to reduce this competition, no definite assurance that this will be a permanent continuing future policy has been as yet afforded the industry.

(c) Eliminate destructive price policy in buying of equipment:

Due, no doubt, in large part to the unwillingness of the contracting officers of the Government to expose themselves to recurrent unjust criticism and investigation and due in part also to the fact that the entire procurement business in aircraft has been carried on under inflexible rules and regulations of long standing, a great many of the orders placed with the industry during the period from July 1919 to the present time, have been placed at prices which did not yield a fair profit commensurate with the risk and in many instances imposed heavy losses and, therefore, tended to destroy rather than to build up a strong, capable, well equipped industry in the United States.

Several other important factors have contributed to this result. One has been competitive bidding. Another, as above indicated, has been the tendency, under the conditions which the contracting officers feel that they labor to be over exacting in negotiating contracts. Still another factor, as stated, has been the use of the Government owned plants and facilities as a threat to drive down prices below a fair level.

(d) Recognize and honor proprietary rights to design as tangible property:

Throughout a large part of the period under review the contracting officers have frequently required the designer to sell the design rights of new equipment to the Government as part of the contract for building experimental models. The possession of these design rights, so acquired, became in many instances a commanding reason why production orders built from the design had to be thrown open to competitive bidding. This has hampered the Government in procurement of adequate equipment. It has also worked a hardship to the producers and has undoubtedly tended to restrict and to hamper the growth of the design departments in the industry and has thereby defeated one of the main purposes for which Congress has been urged to appropriate money for aviation, namely, the maintenance in this country of strong, vigorous engineering staffs within the industry.

We are pleased to reply to your further request for specific suggestions as follows:

1. Government Procurement

Regarding Government procurement, we do not feel that we can properly make effective suggestions regarding methods of Government procurement excepting to point out, as has been done above, the reasons why, in our opinion, Government procurement to date has not resulted in establishing the industry on a healthy and well-equipped basis.

Any form or method of Government procurement that will accomplish the results above outlined will be acceptable to the industry.

2. Legislation

We do not feel that the industry is justified in recommending specific legislation. If legislation should be necessary in order to accomplish the aims outlined in this letter, such legislation, no doubt, would follow the establishment of a suitable Governmental policy.

3. Recent Technical Developments

On pages 197 to 254 of the Aircraft Year Book for 1925, a copy of which is filed herewith, your Board will find a survey of recent technical developments in the United States made by the Aeronautical Chamber of Commerce of America. This review, in the opinion of the undersigned, replies adequately to your request (3) for a sketch of the developments in this field, by the industry.

Conclusion

On Dec. 1, 1924, at a general meeting of the entire aeronautical industry, a resolution was adopted as follows:

"WHEREAS, The President of the United States, in his Message to the Congress, transmitting the Budget, has said:

'Aside from the important factor of training personnel, our National Defense is largely an industrial problem. Today the outstanding weakness in the industrial situation as it affects National Defense, is the inadequacy of the facilities to supply air service needs. The airplane industry in this country at the present time is dependent almost entirely upon Government business. To strengthen this industry is to strengthen our National Defense'; and

"WHEREAS, The Aircraft Industry, sensing its duty in this regard, purposes fullest cooperation to that end,

"NOW, THEREFORE, BE IT RESOLVED, That we, the undersigned, representing the Aircraft Industry in the United States of America, proceed immediately to the consideration of what should be done to enable us to ascertain and develop a sounder policy within the Aeronautical Industry, so that closer cooperation between the Government and the Industry may obtain through such relations of such character and on such a sound basis as will permit the safe and economical expansion of the Industry and the development of military and commercial aeronautics, and thus provide the essential nuclei for production of Service types for the National Defense and emergencies."

This resolution was approved and formally signed by the following manufacturers:

Wright Aeronautical Corporation, Charles L. Lawrance, Vice Pres.

Huff, Daland & Company, Thomas H. Huff, President
Loening Aeronautical Engineering Corpn., A. P. Loening, Vice Pres.

Johnson Airplane & Supply Co., J. M. Johnson
The Glenn L. Martin Co., Glenn L. Martin, President
Packard Motor Car Company, J. G. Vincent

Chance Vought Corporation, Chance M. Vought, Asst. Treas.
Curtiss Aeroplane & Motor Co., Inc., T. H. Russell, Vice Pres.
Aircraft Development Corpn., C. B. Fritsche, Gen. Mgr.
Aeromarine Plane & Motor Co., Inc., I. M. Uppercu, President
Stout Metal Airplane Company, Wm. B. Stout, Gen. Mgr.
G. Elias & Bro., Inc., A. J. Elias, President
Atlantic Aircraft Corpn., Lorillard Spencer, President
Consolidated Aircraft Corpn., R. H. Fleet, President
Boeing Airplane Company, E. N. Gott, President
Airships Incorporated, J. L. Callan, President
The Douglas Company, Donald W. Douglas
Goodyear-Zeppelin Corpn., Edw. G. Wilmer
Cox-Klemm Aircraft Corpn., L. Charles Cox, Pres.
Remington-Burnelli Corpn., Vincent J. Burnelli
Lawrance Sperry Aircraft Co., Inc., Robert Sunon, Secretary
Charles Ward Hall, Inc., Charles Ward Hall, President

Agreements Reached

Pursuant to the above resolution, conferences were held between the representatives of the War and Navy Departments and the industry. Out of these conferences, an agreement was reached with the Army and Navy Air Services, which was finally approved and endorsed by the Acting Secretary of War, the Acting Secretary of the Navy, and the industry, as the accepted policy to control the Government and the industry, in the procurement of aeronautical equipment, as follows:

1. The Government shall encourage and promote the design and manufacture, by other than Government agencies, of aircraft, aircraft engines and equipment. The Government shall not engage in such work in competition with the aeronautical industry.
2. The Government shall recognize and sustain the principle of proprietary design rights applied to all aeronautical material.
3. The Government will not purchase or acquire the design rights for aircraft, aircraft engines or accessories when these are the products of established manufacturers.
4. The Government will not purchase aircraft, aircraft engines or accessories of new design until after the actual articles have been presented for test nor, until said articles have demonstated their superiority over existing and accepted standard types unless the design project is of such magnitude as to demand Government assistance in its development.
5. The Government shall avail itself as much as practicable of the facilities of the industry for all major overhauling and reconstruction.
6. The Government shall cooperate with the industry toward the continuance of successful operation of its units and wherever necessary recognize the principle of sub-contracting within the industry itself.
7. The Government will continue the policy of conferring from time to time with the accredited representatives of the industry in the consideration of their mutual problems.
8. The Government shall, as far as possible, standardize aeronautical accessories, materials and hardware and otherwise assist in the procurement of non-standard materials and supplies.

The above summarizes and adequately expresses the principles which the members of the industry have formally signed and approved. These principles, as above noted, have also been approved and accepted by the Army and Navy. If they are now made the permanent continuing policy of the Government in the procurement of aircraft equipment, the desired result will be accomplished.

The above represents the combined unanimous views of the undersigned, who constitute the major part of the industry, and it covers most of the important questions. We, therefore, trust that it will not be necessary further to enlarge the record of your hearings by the appearance before your Board of spokesman for the industry. Individuals may desire to appear before your Board, but they will represent merely their own companies or themselves, and are not authorized to speak for the industry.

All of which is respectfully submitted for your consideration by the following:

MANUFACTURERS	ADDRESS
Huff, Daland & Co., Inc.	Bristol, Pa.
by Thomas H. Huff, Pres.	
Curtiss Aeroplane & Motor Co., Inc.	Garden City, L. I.
C. M. Keys, Pres.	
Sikorsky Aero Engineering Corpn.	250 West 57th St.,
by I. Sikorsky, President	New York City
Boeing Airplane Company,	Georgetown Station, Seattle, Wash.
F. G. Johnson, V.P.	
Hamilton Aero Mfg. Co.	Milwaukee, Wis.
Thos. F. Hamilton, Pres.	
Airships Incorporated,	Hammondsport, N. Y.
J. L. Callan, Pres.	
Packard Motor Car Co.	Detroit, Mich.
G. H. Brodis, Eng. Exec.	
Consolidated Aircraft Corpn.	Buffalo, N. Y.
by R. H. Fleet, Pres.	
The Pratt & Whitney Aircraft Co.	Hartford, Conn.
F. B. Rentschler, Pres.	
Thomas-Morse Aircraft Corpn.	Ithaca, N. Y.
Raymond Ware, Secretary	
Fokker Aircraft Corp.	Kansas City, Mo.
A. H. G. Fokker, Pres.	
Atlantic Aircraft Corp.	Hasbrouck Heights, N. J.
Halbert E. Payne, Vice Pres.	
Wright Aeronautical Corp.	Paterson, N. J.
Charles L. Lawrance, Pres.	
Loening Aeronautical Engineering Corp.	New York City
Grover Loening, Pres.	
Chance Vought Corporation,	Long Island City
Chance M. Vought, Pres.	
The Glenn L. Martin Co.	Cleveland, Ohio
Glenn L. Martin, Pres.	
The Douglas Company,	Santa Monica, Calif.
Donald Douglas, Pres.	
Cox-Klemm Aircraft Corpn.	Baldwin, N. Y.
L. C. Cox, Pres.	
Buhl-Verville Aircraft Co.	Detroit, Mich.
N. C. McMath, Gen. Mgr.	
Remington-Burnelli Aircraft Corp.	New York, N. Y.
Vincent J. Burnelli	
Charles Ward Hall, Inc.	New York, N. Y.
Charles Ward Hall, Pres.	
Goodyear-Zeppelin Corporation,	Akron, Ohio
P. W. Litchfield, V.P.	
Fairchild Aviation Corp.	New York City
Sherman M. Fairchild, Pres.	
G. Elias and Bro., Inc.	Buffalo, N. Y.
A. J. Elias, Pres.	
Aircraft Development Corp.	Detroit, Mich.
C. B. Fritsche, Gen. Mgr.	

K.L.M. Refitting Its Commercial Air Fleet

It is of interest to announce that, proving the fast development of air traffic and design of commercial aircraft, the K.L.M., the Royal Dutch Airline, operating in Europe, is trying to sell its whole fleet of airplanes, of which many machines have not even one year of service, in order to organize services on an entirely new system, based on a six years' experience. The K.L.M. is offering its fleet of Fokker machines, namely Fokker FII, Siddeley Puma, FIII Siddeley Puma, FIII Jupiter, FVII Rolls Royce and FVII Jupiter, for disposal.

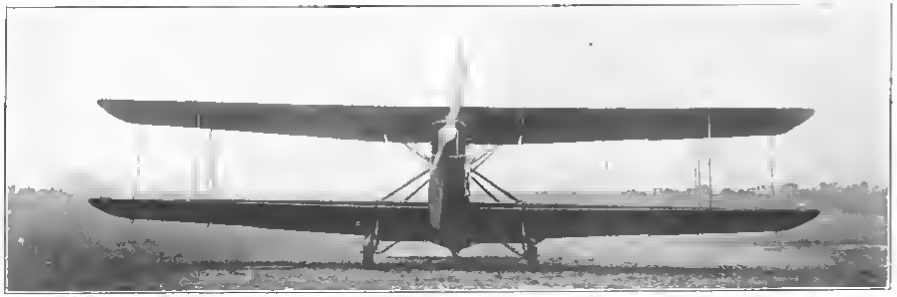
These machines, which are in excellent condition, are, in the opinion of the K.L.M., becoming out of date for use on the big international routes on which the K.L.M. intends to use other craft of more practical design and requiring a smaller amount of maintenance.

The machines of the K.L.M. however, are excellent for use on small lines, where traffic is not yet so intensely developed and where the running companies prefer to invest only a small amount of capital. The report is extremely significant of the scale upon which air transportation is developing today.

The Huff Daland LB1 Bomber

New Army Air Service Bombing Plane Undergoes Highly Successful Tests

The Huff-Daland Bomber, known as the LB-1, has recently successfully under gone flying tests by the Army Air Service and exceeded in performance all expectations. Designed and built by Huff Daland and Company Inc., of Bristol, Pa., with the aid and collaboration of McCook Field, the new bombardment plane sets a new standard in the design of bombing airplanes. Equipped with the new Packard supercharged engine which develops 800 hp., the Huff Daland Bomber has a high speed of 125 m.p.h. and can climb to an altitude of approximately 18,000 ft. without supercharger with a load of 4000 lb. of high explosive bombs.



The Huff Daland LB1 Bomber

All Metal Fuselage

The machine is a single bay biplane with a span of 66 ft. and a total weight of 5,300 lb. light. The fuselage is of all metal internal construction with the landing gear and tail skid employing shock absorbers combining oil pressure with steel springs.

The airplane carries a crew of five in addition to the bomb load and five machine guns and the performance with the Packard 800 hp. 12 cylinder engine is considered highly satisfactory.

The Huff Daland Bomber piloted by Lt. F. E. Harmon of the Army and in its first public demonstration, won the event for large capacity airplanes at the recent New York Air Races, against a field of 12 other planes. Its average speed for the 120 miles was 119.91 m.p.h., a very fine performance for a course requiring frequent turns. In a test over the speed course at Mitchel Field it attained a speed of 136 m.p.h., without supercharger while the designed speed with the supercharger was 125 m.p.h. The latter speed, however, exceeds that of any other bombardment airplane.

A more complete technical description of this highly interesting design is, for the present, delayed at the request of the Army Air Service. It is hoped, however, that, in the near future, more complete details and a thoroughly inclusive discussion of the Huff Daland Bomber will be available.—Ed.

An interesting side view of the Huff Daland LB1 Bomber. From the above two photographs the clean and simple design of a machine of this size is noteworthy. The design appears to incorporate wings which taper both in plan form and in section and this feature must, from a structural point of view, have considerable bearing upon the single bay wing cellule rendering this possible in spite of the long span. The aerodynamic advantages of the tapered wing undoubtedly have also been considered.

The Attainment of High Speeds

Many Engineering Achievements Render High Speeds a Possibility

WHEN the high speeds attained by the Curtiss racers were made public, scientists immediately commenced debating the question as to what shall be the ultimate maximum speed. How fast will man eventually travel? Two factors are involved in that question. One concerns the machine and the other its occupant. Many insist that there is no limit to the physical ability of the human being to withstand the strain of high speeds. They point to the fact that it is now known that one can fall from the great heights without losing consciousness or showing any ill-effect. Members of the medical fraternity say frankly that they know very little about it because they have no precendent by which to set up formulas and tables of endurance under the stress of speed. Thus far man has been able to use anything that he has made.

Human Limit to Speed

Others maintain that there is a limit and that when one is being hurled through space at 500 ft./sec.—the top speed made by the new racers during the trials—he is approaching the absolute limit of human endurance. They expressed the same opinion two years ago after the Pulitzer race at St. Louis. There, Lieutenant Williams, the winner, took his Navy Curtiss racer around a triangular course, making four laps or twelve turns in a total distance of 124.27 mi., at an average speed of 243.8 m.p.h. A few days later he won the world's three-kilometer speed record at 266 m.p.h.

Europeans made similar remarks about the limitations of our physical endurance last December when Bonnett recaptured the record for France, at 278 m.p.h. Yet the pilots themselves say that they have not approached the limit of endurance. They admit that after passing the 250 m.p.h. mark one notices the high speed more, yet it is not an unpleasant sensation, and the pilot is able to use all his faculties with the same skill, which characterizes good piloting with slower machines. Some of them have experienced a strange reaction on making the sharp turns. The centrifugal force apparently exerted on the pilot is similar to that on the contents of a pail being swung rapidly in a circle. The explanation is that a sharp turn tends to drive the blood away from the pilot's head because on the turn his head is nearest the center of the imaginary circle. Still, no pilot has yet completely lost consciousness and has been able to right the plane immediately and continue on at full speed approximately half as fast as the velocity of the earth itself.

Importance of Engine Development

The airplane presents a deeper problem. The one thing that makes such high speeds possible is the internal combustion engine. Advanced knowledge in the chemistry of metals, final application of all known physical laws and facilities for making practical tests long before a human life is entrusted to a flying machine—are elements responsible for the progress made in speed. And speed must be derived from a compact and relatively light weight engine.

A Matter of History

When Glenn H. Curtiss won the first airplane contest—the Gordon Bennett Cup Race at Rheims, France, in August, 1909—his average speed was 43 m.p.h. It was generally predicted then that with improved materials 100 m.p.h. would be the ultimate speed. Today planes are making nearly thrice the speed predicted sixteen years ago. The engine has been the determining factor and an airplane is designed and built around its power plant.

The early machines were powered with motors averaging fifteen or twenty pounds for each horsepower. The new Curtiss V1400 engine which powers the new racers weighs 660 lb. and develops 619 hp., or about 1.1 lb. weight for each horsepower. It has been termed by impartial experts, a notable achievement in automotive engineering, for it is the lightest engine of that power yet developed. That is why the Curtiss racers are believed to be the fastest machines in existence.

The Advent of the Metal Propeller

The metal propeller is another improvement incorporated in these high speed planes. It is of forged duralumin, and is probably the only type of propeller capable of surviving the strain due to the speeds of modern air racing. It is whirled at 2,500 r.p.m. Formerly the wood and glue propellers, making 1,200 revolutions, were considered remarkable for their efficiency, yet, while the new metal propeller is running at high speed, it is pulling the plane forward about ten feet with each revolution.

The propeller is one of the new things that makes possible such high speeds. It is the most efficient propelling screw designed for use in the air, having an efficiency of 80 per cent, while the average water screw is about 40 per cent efficient.

Several scientists attempting to determine the maximum speed at which planes will be able to fly have fixed upon 500 m.p.h. as the absolute limit. By calculating the weight necessary to hold the required engine power they say that to attain a speed of 480 m.p.h. a machine would have to be nearly all body, streamlined, and mostly engine, with wings so short that they would be only 9 sq. ft. in area—a winged projectile, in fact, with lateral fins.

Geared Control System

The design of the new Curtiss Racer incorporates a specially geared system of controls has done away with that sensitiveness which marked the older types and gave the pilot many nerve racking moments when his machine rocked sidewise and pitched up and down. In the new machine, if he desires, he may remove his hands from the controls during straight flight.

All those qualities tend to relieve the pilot from much of the strain of flying, so that with faster speeds he is actually better protected, because the planes are better fitted for arduous work. Another factor that greatly assists the pilot in this trial of physical endurance, is the knowledge that even while traveling at terrific speed, he is comparatively safe. In former racers there was no provision made for his safety in case of accident, his form being fitted tightly into the narrow cockpit. Because of its maximum speed a racer cannot yet be built to land at less than 75 m.p.h., without considerable modification and, forced down with a dead engine, the pilot would have slight chance to land safely because of the scarcity of fields large and smooth enough to permit such high speed landings.

Use of Parachutes Possible

In the new racer, however, the pilot's cockpit also accommodates the parachute, which is strapped to the pilot's back, and even in flying low he can use it in an emergency. Even in a race or speed contest in which he flies often as low as 50 ft. The speed of the new planes is such that if the engine should stop, the pilot can immediately pull back the control stick and zoom the plane up into the air, 1,500 ft. or more. At this point he can pull a lever provided, which throws open the top of the cockpit thus permitting him to either jump out or to be thrown out clear of the machine before pulling the ring that opens the parachute.

Wright–Bellanca Monoplane

High Performance on Low Power Characterized in New Bellanca Plane

THE Wright-Bellanca Monoplane is not an experimental model, but a further development of the cabin plane, which Mr Bellanca designed and built over two years ago and which, incidentally, was also powered with an air cooled engine Its success was somewhat remarkable, the plane winning thirteen first prizes in various events The new design, however, has five feet more wing span, a more powerful engine and a number of refinements suggested by Mr Bellanca's past experience

High Safety Factors

In the design of the airplane, every provision has been made for maximum safety, including low landing speed, perfect vision, elimination as far as possible of the fire hazard, exceptionally long gliding angle of 12½ to 1, and excellent controllability at low speed. With the high position of the wing and the wide wheel tread, landing on rough ground is greatly simplified High factors of safety are provided throughout and the dependability of the Wright "Whirlwind" radial air cooled engine insures maximum operating safety The high speed of the Wright Bellanca plane is 132 m p h , while it cruises comfortably at 100 m p h The initial rate of climb is 900 ft which, even with full load, should enable quick climb from small fields

The plane seats five passengers comfortably and, if necessary, one more passenger may be carried in lieu of baggage For express and mail carrying, a large cabin space of 122 cu ft gives good cargo room. Special effort has been made in the design to reduce construction costs and the single untapered semi-cantilever wing represents the most economical type of construction Every effort has been made in keeping down the manufacturing cost without sacrifice of safety, performance and durability

Passenger Accommodation

The passengers are accommodated in a well-ventilated cabin with comfortable chairs out of the rush of wind. Noise is minimized as far as possible and conversation, it is claimed is not drowned by propeller or exhaust noises It is understood that some modifications are to be made in the seating arrangements of the particular plane which performed so well at Mitchel Field in the recent races These modifications will enable interchanging of seats of passengers during flight, more easily accomplished The vision from the passengers' cabin, both ahead and down on both sides is excellent in all conditions for the pilot as it is also for the passengers

The fuselage was made in three sections The use of highly complicated fittings has been avoided as far as possible throughout the entire design The engine mount is a tubular steel construction hinged to the fuselage, enabling it to be readily swung to one side for inspection purposes and adjustments necessary to the rear parts of the engine. The lubricating system is arranged with the oil tank carried in the engine mount so that oil connections need not be dislodged in the event of engine adjustments being necessary.

Gravity Fuel System

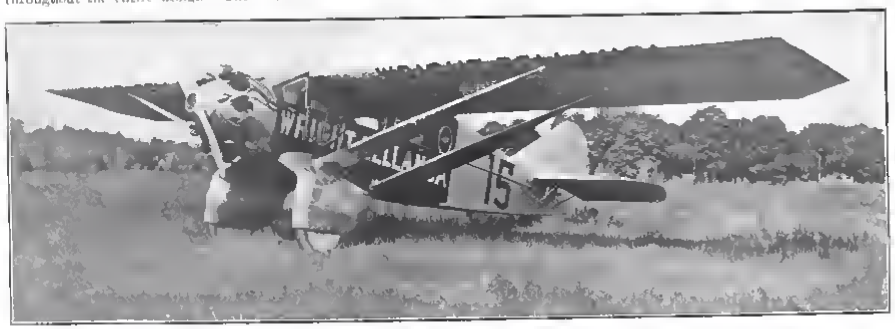
The fuel system, for simplicity, is of the straight gravity feed type with the fuel tanks in the wing, feeding directly to the engine and equipped with a quick shut-off valve In cidentally it may be mentioned that in the Wright Whirlwind engine, the carburetor is below the lower cylinders and in this particular airplane design the carburetor is carried outside the engine cowling, which, in spite of possible minor disadvantages, possesses the added feature of aiming towards the reduction of fire hazard

Structural Details

The wing construction is simple and conventional The two spars are spruce and of solid I-beam section The ribs are also spruce, bass wood and balsa, with triangular braces making a very strong and light combination This type of rib was tested to over 800 lb before breaking For a load factor of 7, only 375 lb test load is required Their weight is 12 oz each All the ribs are the same, with exception of one, at the tips, which is tapered. The covering of the wing is fabric, treated with seven coats of dope and one of Valspar The wings are pin jointed to center section of fuselage

The Bellanca Struts are of medium lift, aerofoil section, and the inner ends of these struts are attached to the body and the outer ends, to the cantilever points of the main wing spars, taking at the same time, the landing and the flying loads Their lifting capacity is enough to carry more than their own weight, with the additional advantage of assisting effectively, the lateral balance of the plane, through their exaggerated dihedral The load factor of the Bellanca struts is 12 They are made of straight grained birch, I-beam section and of spruce and bass-wood ribs The leading edges are made of grooved balsa, protected by spruce and the covering is fabric, also treated with seven coats of dope and one coat of Valspar

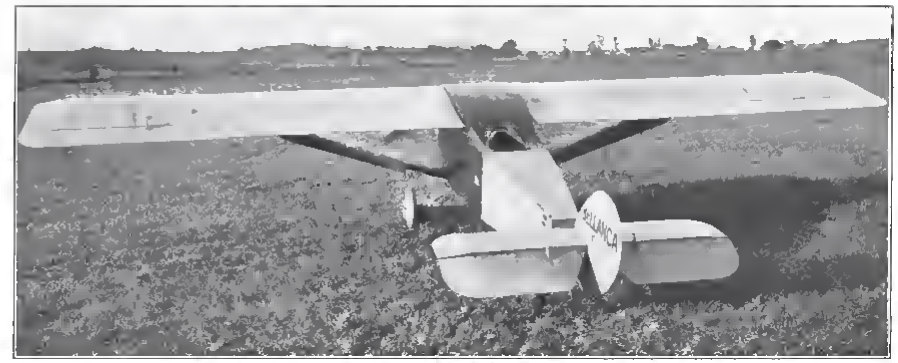
The power plant, the cabin and the tail are three complete separate units, which can be readily separated, one from the other thus making it possible to replace any one of them The engine mount weighs only 13½ lb and between it and the cabin is a duralumin fire-wall, which carries the cowl of the engine The engine mounting engine, oil-tank and the cowl, form a complete unit which can be quickly detached from the fuselage by removing 4 pins By removing two pins and disconnecting throttle, spark and fuel line, the engine can be swung back on a hinge. The fuel tanks are welded sheet aluminum, located one in each inner extremity of the main wings with a total capacity of 63 gal. The gasoline and the gauge lines are of copper tubing and are located to be easily accessible With the oil tank in the engine section, gravity fuel feed, and no water, the plumbing is minimized



The Wright-Bellanca 6-seater cabin plane The somewhat novel form of cantilever undercarriage with its very clean and robust construction is clearly shown This machine scored first place in efficiency in Event No 5

tubing. It is completely enclosed in a streamline duralumin covering Its resistance, as a result of the fairing, is claimed to be much less than the ordinary type of landing gear The shock absorbers are readily rewound, being accessible in spite of the unusual undercarriage construction

The stabilizer is a non lifting section and adjustable in flight. All the tail units are constructed of spruce, bass wood and ash, and covered with fabric, doped and varnished



Three quarter rear view of the Bellanca CF cabin plane from which the ample range of vision obtained by the pilot may be grasped

The center section of the fuselage is built with ash longerons and bulkheads, covered with mahogany plywood and is upholstered in mohair, while the tail section is made of welded chrome molybdenum tubing and is attached to the cabin section by 4 pins The tail skid is of birch and is located entirely outside of the body and can be easily attached and detached while the shock absorber is also outside

There are nine windows in the cabin, three large and one small, one on each side and one large one in the front, giving the pilot, as well as the passengers, excellent vision. The landing gear is of cantilever construction, somewhat novel in appearance, and is built of duralumin and chrome molybdenum

Span	45 ft.	Wing Area	272 sq. ft
Chord	6 ft 7 in.	Fuel capacity	63 gal.
Length	24 ft 9 in.	Oil	5 ½ gal.
Height	8 ft. 5 in	Weight empty	1,790 lbs.
Weight with gasoline, oil and pilot			2,380 lbs.
Weight of pay load of five passengers			3,240 lbs
Weight of pay load			850 lbs.
Weight per H P with gasoline, oil and pilot			11 9 lbs.
Weight per H P with pilot and 850 lb pay load			16.1 lbs.
Weight per sq. ft with gasoline, oil and pilot			8 75 lbs.
Weight per sq ft with pilot and 850 lb. pay load			11 8 lbs

Log Not Correct

After the accident to the Shenandoah, AVIATION *published what purported to be a log of the last trip of the airship. We are glad to print the statement of Commander Rosendahl regarding this incorrect version of the trip* —Ed

To the Editor of AVIATION —

In the issue of your periodical "AVIATION" dated September 14, 1925, there appears an article entitled "A Twister Wrecks the Shenandoah", which contains reference to an extract of what is purported to be the log of the SHENANDOAH Knowing that your magazine strives for accuracy in all its published articles, I feel called upon to point out that this quotation, beginning in the right hand column of page 311 and continuing to almost the bottom of page 312, is a pure fabrication on the part of some one I saw published in some newspaper on September 5, 1925 an article which I believe to be identical with your quotation and I feel that you have been the victim of some over-zealous writer, who put versacity last in an effort to produce "copy".

As Navigator of the SHENANDOAH I was the official custodian of the log of that Vessel and I know that no such entries occur in the SHENANDOAH'S log nor in her radio log I saw both of these during the flight and shortly after the disaster Furthermore, I know that their contents were never revealed to the press at any time up to and including September 5, 1925 At that time these records became the property of the Board of Investigation then in session in Caldwell, Ohio

Signed C E. ROSENDAHL,
Lieut.-Commander, U S. Navy.

To Investigate the Upper Atmosphere

Three hundred sounding balloons ranging in sizes from two to three feet in diameter and inflated with hydrogen gas were liberated from Shenandoah, Iowa, on November 3. This marked the beginning of an experiment arranged by the B. F. Goodrich Rubber Co in cooperation with the Henry Field Seed Co 's radio station KFNF

The purpose of the experiment was twofold First, to study the directional features of different atmospheric levels for aeronautical information and, second, to study those currents with respect to their possible influence upon radio broadcast reception.

The Goodrich Company's interest applies to both fields. They were the first rubber company to accept radio as a medium for presenting good-will entertainment to millions of radio listeners and they manufacture many hard rubber radio accessories. On the other hand they are extensively interested in aeronautics, being manufacturers of many accessories for both lighter-than-air and heavier-than air crafts

The balloons used in this experiment were of the type which government meteorological experts use in taking altitude tests of atmospheric conditions. They were inflated at varying pressures, pre-determined to gauge the altitude at which the balloon will travel.

Tags attached to the balloons gave specific instructions and those, together with the announcements that are daily broadcast from KFNF, are expected to get full cooperation of those who find the balloons, in reporting details of location and time The return of these tags will enable the completion of records, which can be studied by both radio and aeronautical engineers.

Captain Westervelt's Plan

Head of Naval Aircraft Factory Presents Concrete Recommendations to President's Air Board

ONE of the most definite and specific plans given to the President's Air Board was formulated by Capt. George C. Westervelt, who is in charge of the Naval Aircraft Factory at Philadelphia. His suggestions are worthy of careful study coming as they do from a naval officer who has had a long period of observation in which to study aeronautical conditions in the Navy. The idea of an Air Corps in the Navy is not new but coming as a recommendation from a naval officer, who is conversant with the needs of naval aviation, the Air Board was apparently greatly impressed. Captain Westervelt's recommendations follow:

Having gone on record as an unalterable opposition to the separation of the air service from the Navy, I wish further to go on record as stating that this is not to be taken as implying that I am the approval of any change within the Naval organization itself, or that I am in thorough approval of all conditions as they exist at the present time. This is in fact far from being the case. In common with a very large proportion of the officers of the Naval Air Detail I am in favor of certain organizational changes, and I am convinced of the necessity for such changes if the air arm of the Navy is to develop logically to the greatest advantage of the Navy as a whole.

The Navy as an organization is a complete entity. It contains within itself all of the elements required for the performance of its activities. The problem, therefore, with regard to the Naval air arm is the arranging of the organization within the Navy itself so as to provide in the greatest degree for the proper functioning of the air arm with relation to the other arms of the Naval Service. It is my desire to suggest, as briefly as practicable, the changes in the Naval organization to provide this proper relation. In suggesting these changes I desire to state that I have every reason for believing that they are, in fundamental aspect, in accord with the opinions of a high percentage of the officers at present in the aeronautical detail.

I enter this discussion in no spirit of controversy. I make no charges. I present no evidence of bias or of narrowness on the part of anyone. I merely give an assurance, which can be checked up by the examination of other officers in the air arm, that the majority of the present officers of the air arm of any length of service, whether of the flying branch or of the technical branch, are profoundly dissatisfied with their present status, apprehensive of the future, desirous of certain changes to be definitely specified by legal enactment, and in sensible accord as to what these changes should be. This is a somewhat unusual set of elements to be found in any Service, and is deserving of earnest attention and consideration.

I present in a summarized form a proposed change in the interior organization of the Naval Service which will meet, in the main, the desires of the air arm of the Naval Service. This summarized form is not in any sense regarded as in the language of a proposed bill but is simply a summary of the fundamental aspects of the desired changes.

Proposed Naval Air Corps

(a) The air arm of the Naval Service will be concentrated in a branch of the Navy to be known as the Air Corps. This Corps will be a Corps paralleling and coordinate with the Line Corps, and will be a military corps, consisting in its composition of all of the necessary elements for the carrying on of its functions.

(b) No fundamental change in the organization of the Navy Department is contemplated, and the new Corps projected will function as an inherent portion of the Naval establishment, as is the case at the present with the other Corps within the Navy. Within this new Corps there will be only one type of commissioned officer, to be known as an Air Officer and, in consequence, a single line of promotion. The initial positions of officers within this new Corps will be determined among themselves, as largely as is practicable, by length of service.

(c) The numbers of commissioned officers, warrant officers and enlisted personnel in this new Corps will be fixed by a careful survey of Service requirements and plans and the yearly increments set, so that orderly process may be followed out in recruiting the Corps to determined strength. In the main the commissioned personnel of this Corps will be recruited from the present aeronautical detail of the Naval Service, from those of the Marine Corps, from other officers of the Navy and Marine Corps, and from future Naval Academy graduates.

(d) All officers of this new Corps will qualify either as observers or as aviators. Unless there is some physical bar to qualification as aviator this will be the essential qualification. Officers not qualifying in one or the other of these ratings within a certain stated period of probation will revert to their primary Corps classifications.

(e) Flight pay in this Corps will depend on duty. Duty which is not of a nature actually requiring flight performance for its proper discharge will not carry with it flight pay. The determination of the character of duty will lie with the Chief of this Corps.

(f) The Corps will be headed by a Chief with the rank of Rear Admiral of the upper nine. The Assistant Chief will have the rank of Rear Admiral of the lower nine. In addition, as a member of the Headquarters Staff there will be a Rear Admiral of the rank of the lower nine for duty as Inspector General. These three positions will be appointive for terms of four years. Of the commissioned officers in this Corps after the Corps attains full authorized strength one third of one per cent will be Rear Admirals, and the other grades will be proportioned in accordance with the percentage provided for the Line Corps. These numbers will be exclusive of the three Flag officers required in connection with departmental activities and at no time after the organization of the Corps in effective working condition will there be less than three Flag officers in addition to the departmental group referred to. Of this minimum number of Flag officers one will be attached to the General Board and two to the Fleet.

(g) A Flag officer or a Captain will be attached to the Office of the Chief of Operations for duty in connection with the air operations.

(h) An officer of the Air Force can be assigned to any duty within his capacity at the discretion of the Secretary of the Navy. As between officers of the Air Corps and officers of the Line Corps rank determined by grade and length of service, will govern. In joint operations involving officers of the two Corps the senior officer will command.

(i) Promotions within the Air Corps will be by seniority up to and including Lieutenant Commander, and by selection to the grades of Commander, Captain and Rear Admiral.

(j) Officers of the Air Corps on sea duty will be available for watch standing, for First Lieutenant and navigational duties, for radio and reference duties, and in general duties similar to those performed at present by officers of the Line; but when operating in conjunction with aircraft their air duties will be paramount and will be so arranged by commanding officers as to not be interfered with by other duties assigned. In general, aircraft carriers and other vessels of the air train will be commanded and officered by officers of the Air Force, but nothing should prevent the detail to these ships of as many non-flying personnel as are required in connection with the operation of the ship but who are not required in connection with flight activities. This reasoning should also apply to enlisted and warrant personnel.

(k) The training, promotion, etc., etc., of enlisted personnel of the Air Arm will be under the direction of the officers of this arm. Recruiting will be in accordance with the ordinary machinery of the Navy Department. The Bureau of Navigation will continue to be the centralized record Bureau for the Navy and will function with respect to the Air Corps outside of the exceptions just made just as it does for the other branches of the Naval Service.

(l) Except where peculiarly a part of the Air Arm, present Bureau facilities will not be duplicated. In explanation, the Bureaus of Ordnance and of Supplies and Accounts will, in general, handle questions of the design and provision of ordnance, the purchase and upkeep of stores, and the carrying of pay accounts. The Air Arm will, however, be in control of funds appropriated for its specific purposes, and in the preparation and efficiency of the budget relating thereto.

(m) At any time within five years officers of the Air Arm may upon own request retransfer to the Corps from which appointed to the Air Arm, and will resume the relative positions held unless due to court martial or other cause they have lost position within the interval, in which event their positions will be fixed by the Secretary of the Navy in order to provide for such demotion.

(n) Retirement features in connection with the Air Arm to be uniform with those in connection with the Navy in general, except the provision of a twenty (20) year retirement feature at fifty per cent (50%) of pay, up to seventy-five per cent (75%) of pay for thirty (30) years' service. Certain provisions should be worked out for selection and in connection with promotion by selection in order that officers no longer available for the general duties of their rank may be eliminated.

(o) Under the Air Arm will come control of all bases, stations, plants, factories, and other facilities used primarily for Naval aeronautical purposes.

(p) There will be a Naval Reserve Air Force of numbers to be worked out by the Department.

(q) All Flag officers at sea and their Chiefs of Staff of the Line Corps or of the Air Corps will be regarded as being on a flight duty status and will be issued orders accordingly.

To persons familiar with military matters it will be made apparent that what is here suggested is the creation of a second line or military branch. This will be a new departure so far as the Naval Service is concerned. So far as the Army is concerned a situation of this sort exists already in that the Infantry, the Artillery, the Cavalry, air, are all Line branches, coequal and coordinate. There is a further similarity between the changes above suggested and the conditions which exist at the present time in the Army in that Line officers are fairly freely interchangeable in the duties they can perform, and in that general officers are available for any general duties.

Changes of the nature proposed could be instituted without the present Naval mechanism being slowed down by a revolution. Of additional cost there will be little or none over that to be expected under present conditions. There will be little or no addition in overhead expense over that to be expected of natural development under present circumstances. Increased efficiency, accelerated development, improved morale should follow in very great degree.

We propose no closed corporation, no select corps for the sole benefit of those already in this specialty. The gates are open, and anyone may try his hand at qualifying.

When in the course of time the Air Arm of the Navy is of sufficient importance and dignity and has developed Flag officers of sufficient merit and ability, it will be quite reasonable to expect, under the plan above outlined, that the Commander-in-Chief of the United States Battle Fleet may be occasionally an officer who has made his way up through the Air Arm.

Philadelphia Sesqui–Centennial Exposition

How would you like to arrange a flying program for 40,000 people? Such is the job of Hollinshead N. Taylor, in the Sesqui-Centennial Exhibition to be held in Philadelphia, June 1—Dec. 1, 1926.

"Nothing mammoth about this job. We'll just tell the flying fraternity what we want them to do—and they'll do it; what could be sweeter?" Mr. Taylor said when asked about his work.

The chairman of the Sesqui-Centennial Committee on Aviation has mingled with fliers, manufacturers of aircraft, officials of the United States Air Services, foreign luminaries and parlor variety of air enthusiasts. He told me he never would have undertaken the job had he not felt the spirit of helpfulness and cooperation he has found in the realm of aviation.

Hollinshead N. Taylor has been a man of big interests and affairs in Philadelphia for twenty years. His firm—N. and G. Taylor & Co.—manufactures tin plate by the acre for factories here and abroad. He has been accustomed to thinking big, which is a consolation to the men in flying, who know

Hollinshead N. Taylor, Chairman of the Aviation Committee

how impressive a program can be arranged when the wealth of the air world can be commandeered.

Perhaps 90 per cent of the fliers and flying enthusiasts of America will be in Philadelphia next year. The percentage figure sounds high now but probably every flier in the country will be there before the close of the gates on Dec. 1.

Aviation to Play Important Part

Mr. Taylor, head-over-heels a flying man, has dedicated a lot of his time and skill to foster flying and to make friends for flying. He preaches it among his non-flying associates. He will preach very much more effectively during the Sesqui-Centennial Exhibition.

He feels that his principal job, in addition to entertaining the multitudes of people, is to set forth aviation in its best estate in order that our own people and the visitors from across the seas will have a more wholesome respect for American achievements in the air and American prospects in the air.

That bugaboo, fear, will be treated subtly but none-the less gingerly. Working on the theory that the person who flies, even only once, is ten times a greater booster for flying than the person who has yet to make a flight, Mr. Taylor will work out a program calculated to attract literally millions of persons to take their first flights.

Conservative Flying Only

"Don't let the impression get abroad that our flying program is going to be a series of dare-devil follies," said Mr. Taylor, with quite a bit of force in back of what he said. "My committee recognizes its responsibility to make friends for aviation. The roof-skimmers and tree-top-grazers can leave their skimmers at home; they will not become a part of the Sesqui flying program.

"Stunting? Lots of it, lots of it and everything spectacular that can be done by good pilots with good equipment but mix on the hazardous stuff. The fliers of America must become impressed with the fact that they are on trial at our Sesqui-Centennial Exhibition, on trial before a vast and critical jury. We can make 10,000,000 friends in the first couple of months of the Fair and then lose all our advantage by some idiotic carelessness. I know I speak for my committeemen, when I say this will not be tolerated."

Flying Demonstrations

The flying program is being planned by George F. Zimmer, Director of Aviation, and a committee of experienced flyers, all of whom are thoroughly conversant with the task they have undertaken—the task of arranging for the greatest aerial congress in the world's history.

The flying demonstrations will be so arranged as to give the 50,000,000 persons who, as report goes, are expected to attend the Exposition, a sound idea of present day equipment and methods. The participation of army and navy airships has been promised. Too, the entire history of flying development will be shown in an exhibit of machines which will include every type from the earliest Wright plane to the most modern bombing and pursuit air craft. A landing field is under construction adjacent to the 670-acre Sesquicentennial site in South Philadelphia. Provision will be made for housing military and private planes and possibly for lighter-than-air craft, while passenger planes will arrive and depart on a regular schedule.

Convenience Not Overlooked

Sesquicentennial visitors will find the Exposition site within easy reach of the center of the city, scarcely ten minutes from City Hall by car and only five more by trolley. Excursionists may enter the Sesqui grounds directly by train, by steamship or by air.

The Exposition grounds occupy an area of 670 acres in South Philadelphia, adjacent to the Philadelphia Navy yard and including the League Island park. The 670 acres area does not include the air field, the army and Boy Scout encampments or the parking space for the more than 70,000 automobiles expected.

In addition to his post as chairman of the aviation committee of the Sesqui-Centennial Exhibition, Mr. Taylor is president of the Philadelphia branch, National Aeronautic Association, vice-president of the Aero Club of Pennsylvania, member of the aviation committee of the Chamber of Commerce and vice president of the Philadelphia Chamber of Commerce.

He has a financial interest in the National Air Transport, Inc., and he holds membership in the Society of Automotive Engineers, American Iron and Steel Institute and the American Society of Steel Treating. He is numbered among the members of the Franklin Institute, Philadelphia's leading scientific society, and the Army Ordnance Association, to the annual meeting of which he expects to fly on Oct. 2.

The Allison Four-Engine Transmission

A Reduction Gear Enabling the Use of a Centralized Power Installation in Large Aircraft

THE Allison four-engined transmission is a reduction gear through which four standard Liberty engines drive one large propeller. This transmission was designed and built by the Allison Engineering Company, Indianapolis, Ind., for use by the air service in connection with a proposed long range night bomber utilizing a centralized power plant. The gear provides for a reduction ratio of 53 to 18, thereby reducing the normal engine speed of 1700 r.p.m. to 577 r.p.m. at the propeller.

Details of the Gear Arrangements

The transmission consists of a large rectangular cast aluminum case, carrying four driving pinions, one in each corner, grouped around a large spur gear on the propeller shaft. Each pinion is driven by a standard 400 hp. Liberty engine through a sliding tooth clutch in such a manner that any engine may be thrown in or out of gear at will, the front half carries the propeller shaft with its gear and bearings and the rear half, the four driving pinions, clutches and generator mounting. In assembly, the two halves are bolted together along the flanges, the bell-shaped opening in the rear half receiving the rear bearing on the propeller shaft. Thrust stresses are taken by several large through bolts spaced near the periphery of the large gear, which drives a 600-watt electric generator in the top of the casting. An independent oil system, operated by a pump, supplies oil from an outside tank to the gears and bearings. The pump also scavenges the case and returns oil to the tank.

The Complete Installation

In the installation, the transmission is mounted by means of the corner brackets, no other supports being necessary. The engines are placed in pairs on different levels, with one pair coupled close to the upper gear pinions by short hollow shafts and the other pair mounted to the rear and connected to the lower pinions by long hollow shafts passing under the forward engines. The distance between the pinions, however, is such that either the front or rear pair of engines may be placed on the upper or lower level as desired. The transmission complete with propeller hub, drive shafts, coupling and adapters exclusive of generator weighs 875 lb.

Endurance Tests Satisfactory

For the 50-hour test, which was run at the manufacturer's plant, each engine was equipped with a tachometer, oil pressure gage, switches, an ammeter, spark and throttle controls, and a clutch shifting lever for engaging the gear. The temperature of the oil from the transmission, as well as that of the oil and water from each engine, was observed during the test, which was made in five hour runs, four hours at 90 per cent power and one hour at full power.

To begin the test, one engine was first engaged with the transmission and then started by means of the electric starter. This engine throttled to about 700 r.p.m. continued to operate the gear until the other engines had been started out of gear, throttled to approximately the same speed and then engaged. After starting, any engine could be engaged without difficulty by simply bringing it to the same speed as the others before shifting into gear. As the test proceeded, it was found possible to throttle, disengage or stop any particular engine at any time or speed.

At the completion of the test, the transmission was examined and found to be in excellent condition, the only indication of wear being a slight polishing of the gear teeth at the pitch line. There was practically no wear on the bearings, from which it was evident that the transmission would be long-lived. The method of engaging the engines with the gearing through sliding tooth clutches, appears to be highly satisfactory, and it is thought that any inexperienced operator would have no difficulty in throwing any engine in gear even at a difference in speed as high as 50 r.p.m. Shifting in all cases was accomplished with the same facility as in an ordinary automobile.

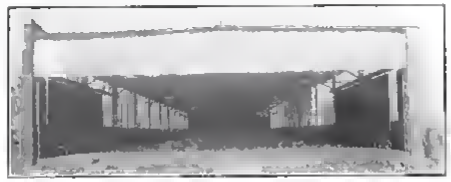
Radio Signal for Night Mail

A radio beacon tower is to be erected at Monmouth, Ill., under the supervision of the radio laboratory of McCook Field, for the Air Mail Service.

The new arrangement is known as the interlocking signal system. The pilot, trying to keep his course in the direction of the transmitting beacon, hears certain signals. To the right and left of the true course these signals have different characteristics, respectively. On the course, these two signals are of the same intensity and interlock, a third signal being formed, which is a continuous and unbroken sound. Hearing this constant sound, the pilot knows he is on his course. If the sound becomes broken into either of the two signals before mentioned, he knows he is to the right or the left of the course and must make correction.

One difficulty with the system has been that the flier has had to depend entirely upon his hearing, involving considerable concentration and the possibility of personal error.

To correct this difficulty a visual indicator has been developed, which consists of three small lights, mounted in the instrument board and connected with the receiving set. The unbroken signal, obtained by the interlocking of the two separate signals at a point of equal intensity, causes a relay to operate a telephone selector, which, in turn, causes a white light to flash. While the white light is on, the pilot knows he is on the right course. To either side of the course, the component signals actuate relays, which, in turn, cause the selector to close the circuit, lighting a green or red light to the right or the left of the course, respectively.



Modern Aircraft Structures built by Henry Ford at Ford Airport, Dearborn, Mich. Left, plant of the Stout Metal Airplane Co., part of which is used for the experimental work of the Aircraft Development Corp. Right, hangar in which Ford and visiting planes are housed. Both structures were designed and erected by The Austin Co., of Cleveland.

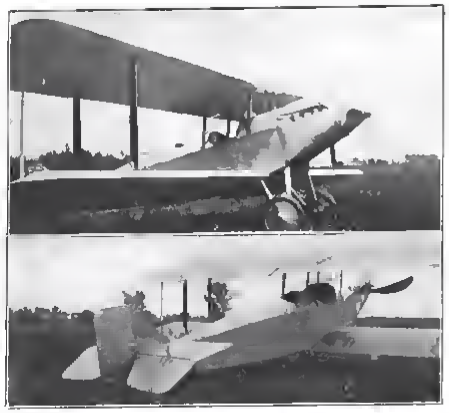
The OX5 Humming Bird

A Reliable Low Price Commercial Plane With a Proved Engine

The Humming Bird produced by White's Aircraft, of Des Moines, Ia., is a new 1925 commercial airplane incorporating very sound mechanical and technical features in its design and construction. It has been produced to meet the ever increasing demand for a commercial plane for use either as a touring plane or a straightforward commercial carrier. Its most significant feature is, of necessity, low price of output, which has been made possible by a very close attention having been paid to the most economical methods of construction and design.

Normal Reliable Design

A single bay tractor biplane, the design is carried out in conventional manner, wood being used as the basis throughout. The wings are built up of two main 'I' section spars with ribs of the truss type. These ribs have been sand tested and found to withstand a load of no less than 800 lb. Wing bracing, with the exception of lift and landing wires, is carried out internally in the wing, including the drag bracing. Ailerons of the unbalanced type are fitted to all four wings. It is interesting to record that, for the purpose of storage convenience, the wings are built to be easily dismounted leaving only the center section which is supported from the fuselage on steel tube struts.



Two Views of the OX5 Humming Bird

The fuselage is arranged with two cockpits the rear being occupied by the pilot while the front cockpit is capable of accommodating two passengers although room for three is available if necessary. The fuselage itself is of strut and wire construction with plywood running to the back of the cockpit. The engine section is constructed of steel tubing and the engine may be changed by removing four bolts. The radiator is placed between the landing gear struts. Although less water is carried than usual, the engine is said to run at a very low temperature. The cowling is of 20 gage aluminum.

The undercarriage, having a tread of 4 ft. 8 in., is of the 'V' type constructed of steel tubing and streamlined with spruce fairing.

The fixed section of the tail plane is constructed similarly to the wings, of wood and is double cambered in section, while the remainder of the tail unit is constructed entirely of welded steel tubing.

Control is effected by the customary stick and rudder bar method through the agency of wires operating around ball bearing pulleys. These pulleys are located in convenient places for inspection while the aileron wires are external along the wings. Single control only is provided in the pilot's cockpit.

Fitted with the Curtiss OX5 engine it is claimed that the airplane can be held upon a level course at an engine speed of but 800 r.p.m.

Characteristics of the design and performance figures are given below.

Characteristics

Length overall	23 ft. 5 in.
Height overall	8 ft. 2 in.
Span upper wing	33 ft. 1½ in.
Span, lower wing	33 ft. 1½ in.
Chord upper wing	5 ft. 0 in.
Chord lower wing	5 ft. 0 in.
Gap	5 ft. 3 in.
Stagger	0 ft. 0 in.
Airfoil (wing section)	U.S.A. 27 modified
Angle of incidence upper wing	2 deg.
Angle of incidence lower wing	2 deg.
Sweepback	None
Dihedral upper wing	2 deg.
Dihedral lower wing	1½ deg.
Angle of ship when resting on ground	12 deg.
Span, biplane	6 ft. 4 in.
Area of wings including ailerons	316 sq. ft.
Area of ailerons	33 sq. ft.
Area of tailplane	25.5 sq. ft.
Area of elevators	15 sq. ft.
Area of rudder	7 sq. ft.
Area of fin	2.5 sq. ft.
Track of wheels	4 ft. 8 in.
Weight empty	1027 lb.
Useful load	
Fuel and oil	285 lb.
Crew	180 lb.
Pay load	525 lb.
Total weight	2027 lb.
Wing loading	6.3 lb./sq. ft.
Power loading	23.5 lb./hp.
Fuel capacity	35 gal.
Endurance at cruising speed	4½ hr.
Range	375 mi.
Maximum speed full load	83 mi./hr.
Landing speed full load	28 to 28 mi./hr.
Climb to 1,000 ft. full load	0 min. 58 sec.
Climb to 2,000 ft., full load	2 min. 5 sec.
Climb to 5,000 ft. full load	7 min. 20 sec.
Absolute ceiling	18,500 ft.

The Jupiter-engined Goliath in Morocco

One of the outstanding features of the recent successes of the French and Spanish forces against the Riffs has been the invaluable cooperation of the big Jupiter-engined Goliath bombing planes which have engaged in important operations against the Riff Capital and against important Riff bases north-west of Taza. In one day no less than ten tons of bombs were dropped over Ajdir by five of these machines flying at a height of 6,000 ft. At least two squadrons of this type of machine are already doing invaluable service for the French in Morocco, and it is understood that they will be reinforced by further squadrons of similar machines if necessary.

These machines are of especial value because fitted with the Bristol aircooled Jupiter engine, the machines normally carry 400 kg. more load than the same type fitted with water-cooled engines of even greater nominal power, while the performance is also better. In fact, under trial the Goliath machine fitted with the Jupiter engines put up exactly the same performance for speed and climb as its prototype with water-cooled engines, even when the former was carrying 700 kg. more load than the latter.

On a basis of experience, the French authorities today are "all out" for the Jupiter engine, more especially for service in the Mediterranean, for the very sufficient reason that the type allows of the carrying of the maximum military load and the highest performance, while the reliability of the engine under the most varied conditions is proved.

Shenandoah Investigation

Conflicting statements as to the probable cause of the wreck of the U. S Navy airship Shenandoah on Sept. 3 were still being made before the court of inquiry at Lakehurst, N J, this week.

Chief Rigger James H Collier, on September 25, stated positively that there was a failure of several of the helium gas cells in the airship before she began to break up This testimony was contradicted by some 12 other survivors, all of whom declared that they saw no signs that any of the cells had failed under the enormous pressure to which they had been put when the craft reached an extreme altitude of 6,065 ft

Lt. Roland G. Mayer, U S N, one of the original construction officers of the ship, who was in charge of the gas-valve system on the trip which resulted in the wreck of the airship, denied that the reduction in the Shenandoah's valves from 18 to 8 had been made to save helium He declared that the reason for the change was to eliminate excess weight

Lt Joseph B Anderson, U.S.N, aerologist aboard, testified that one full hour before the Shenandoah encountered the Ohio storm, he advised a change of course Subsequent recommendations by him, he said, were voted down by the commander and the other Shenandoah officers Lieutenant Anderson said that it was a cyclonic storm that directly caused the destruction of the ship

Capt Anton Heinen, the German Zeppelin expert, in testimony before the court, stated that, in his opinion, the ship ran deliberately into the center of the storm for at least half an hour after danger signals had been shrieking out loud With the ship having sufficient power for steerage she probably could have got out of danger, he declared

You Know Avviashun, Al!

A Letter to the Editor of AVIATION*—with complete and sincere apologies to Mr Ring Lardner*

Dear Al —

Well Al, maybe you has been thinking all this time I am dead, on account I not writing before, but such is not the case The facts of the matter is that I has been investigating this here airplane business and it certainly is a funny sort of stuff Think I told you I was going to get in this business and I did and because of all this hullaballoo that has been raised about it lately, thought you might want a report on it from one on the inside, for your inveterate readers

Making up an airplane in the factories, Al, is sort of like a musical comdey What I mean by this is a joke, a course, not that there is anything musical about the planes as they is built in spite of the fact that the younger men in the business sometimes refers to tuning up the engines. But if you know anything about musical comdies, why some fellow thinks up a new song and dance, or a crack about prohibition and they just up and put it in the show Well, that's how it seems to be with airplanes, or ships as I has jokingly nicknamed them A chap thinks maybe a chewing gum and chocolate machine would look well in the plane so he goes in the factory and tells a fellow to put one in and then later one of the engineers has it taken out so that he can have hot and cold running water installed And so it goes. Really if they left all of the stuff what was ever put in the machines where it was, why the ship would be hauling more furniture and jimcracks than come over on the Mayflower And you don't have to have no technical education to see that this leads to confusions, but as some of your readers may be of the lay mind, I will give an example Just the other day one of the factory foremen come up where a bunch of the engineers was discussing the worlds serious and says, "Hey Rex, you know that airplane we are building, well, they aint any engine in it." Rex says, "What and the h--l, I was almost sure I told somebody to put an engine in that plane" "Nope" the foreman says, "Must have been two other fellows I has looked all through it myself and they aint no motor in it" "Well," says Rex, "you tell charley to look over in the stock room back of that can of varnish and see if they aint a motor there. Saw something there the other day but maybe it was an old overcoat somebody had threw away If we can't find no motor for it guess we'll have to make a glider out of it"

It's lucky somebody thinks to put the wings on it. Hey, Al?

These changes in the airplanes what I just spoke about is made so fast that the drafting department can't keep up with them, what with having both the football and the fights results to watch, and sometimes the drawing is not completed until the ships has fought in a couple of wars Just the other day the drawings for one of Prof Langley's experimental models was finished and they are now working on the machine what is in the Smithsonian institution in Washington, or is it Pittsburgh

Recently I went to see the National Air Races and there has been some criticism of the way these races was run, what with a lot of soldiers walking around with blood in their eye and fixed bayonets. The only criticism I has to offer is that one of the guards would not let me out of the General Public section and down to the hangars in spite I told him who I was Guess he hadn't been around much and fortunately for him I did not make any fuss about it as I discovered the view was just as good from there I come off the winners in verbal combat though, Al, as you may expect He says, "I don't care who in the h--l you are, you don't get by here" I says, "Is that so" and a course he didn't know the answer to that one College educations will tell

A fellow named Casey Jones won a couple of the races an I beg to state that this chap is a flyer, par excellence What I like about him, Al, is that he don't put on no high hat, which is just my joking way of saying he don't do no boasting When he has finish a race, he climbs out of the cockpit in his knickers and light fall overcoat and mingles with the crowd Doesn't run around with a leather overcoat and pilot written on his arm The report has been spread around that for the Ford Tour recently he didn't even bother to put on a vest Offhand my estimates would be that there was more leather overcoats and fellows that talks like pilots around Mitchel Field during these races than there is people knows what is wrong with the government. These fellows is really worse than a New York southern accent and you know how bad that is

A course I must admit that some of the leather overcoats such as the one I has, is worn for their utilitarian value only and not for no vulgar ostentation

The Pulitzer race was postponed two days as you may have heard, but they went fast enough to make up the lost time A new speed mark for a close course was set but even at that a lot of butter and egg men what come out from N Y was disappointed on account the racers did not do the 30 mile course in nothing flat They is no ship built yet that will do this speed but I understand they is working on one that will Most of the planes worked O K but "Cy" Bettis who was exclaimed the winners of the Pulitzer says if he is going to do any more racing some provision must be made in his plane for a fellow what might want to chew a little tobacco

Well, Al, I guess this will be all for the presents as the boss is looking at me like he wonders why and the d---l this job wasn't done long ago.

yrs vy tly Robert R Osborn

Magnetos in the Curtiss Racers

M W Bartlett, President of the Splitdorf Electrical Company (on left) congratulating Lt Cyrus Bettis U S Army the winner of the Pulitzer Trophy Race at Mitchel Field Mr Bartlett had good reason for his happy smile as the magnetos produced by his company have been part of the equipment of every winner of the Pulitzer Trophy for the past five years

AIRPORTS AND AIRWAYS

Cleveland News

By Cy Caldwell

My absence on the Ford Tour and at the New York Air Races seems to have helped aviation tremendously here in Cleveland I am informed officially by J E Whitbeck, Superintendent Eastern Division Air Mail, that during the week beginning Sunday, October 4th, 141 planes landed at Cleveland Airport This number includes planes in the Ford tour, the regular Air Mail and Ford planes, and many Army and civilian planes enroute to the New York Air Races The total of 141 is about 100 more than usually land here in a week, and Whitbeck attributes the gain entirely to my absence. He says that if I had been around the only arrivals would have been those forced down by engine failure. I took this as a compliment at first, but I've been thinking it over, and while I have not yet made up my mind about it, I am almost beginning to think that this has all the ear-marks of a dirty crack

Bill Tipton needn't write about how enormously aviation would be benefited if I went into the cloak and suit business, either I've saved him the trouble Bill commanded the Baltimore Shock Troops at the Races, and when I saw them last at about 3 a m the troops had been shocked into a state of coma.

I have received an advertisement of a distinct novelty in flying suits, a dainty affair of white duck, with these words woven in red on the back "FLY TO-DAY $5.00", which, according to the advertisement, "will incite your spectators to fly with you." No doubt it will incite people, but how it will incite them is the question Will they fly with you—or at you?

Anyhow, I'm getting one, and will advertise my business on my back As the front of the suit is plain I am renting space there to a patent medicine company for their ad: "TAKE PUNKO FOR COLDS"

Speaking of clothes brings one to the subject of what the correct aviator should wear And I'll admit right here that I'm hopelessly out of date, and have been for over 10 years. Here I've been wearing an ordinary suit with conventional long pants never realizing, poor simple fellow, that it is utterly impossible to fly in long pants It just isn't done, that's all

The correct attire, I find upon visiting a field near Cleveland, is short cream pants trimmed with oil and snappy leather jacket brocaded with grease. Field boots, leggings, or golf stockings are worn with the outfit The correct aviator must look as though he were about to leap aboard a horse or seize a golf club Also he must wear his helmet and goggles to and from the field as well as on the field so people will know he is about to brave the elements and is not as other men.

All the pupils at this field I visited wore attire such as I describe, so I could see at a glance they were born pilots, a fact I might have overlooked, otherwise And when they go solo in this modern attire they won't have the tough time I had in my old-fashioned long pants

Now I can understand how it is that Casey Jones gets first prize each year at the races He wears knee pants and golf stockings And here I've been thinking he won those races himself, when all the time it was his magic pants that won the prizes Well, I'm getting a pair to carry in my plane for

luck I'll wrap them around the control stick or tie them to a strut I absolutely refuse to wear them.

Garden City News

By F. Cordova

The races went off pretty well down here last week, and so did quite a number of ailerons, turtle backs, rudders, etc., off some of the ships during the wind storm Friday night. In fact, on Saturday morning one of the visiting pilots wanted to know whether this was the dump ground of the Buffalo Wrecking Co., or Curtiss Field Our bright office boy told him it was just some of the best ships of our Air Force One old lady seeing the Sperry Messenger on its back went up and rubbed its belly

Friday night John Wanamaker sent some of his men out here with a couple of can openers to take Henry Ford's newest tin product apart They took it into John's New York store Not having enough room on the truck for all of it, they left the wing tips out here, that was all right though, because they darn near reached New York on their own account

Sunday Bert Acosta flew the old Curtiss pusher to Mitchell Field Tuesday he flew it back, after looping a few times, barrell rolling and a couple of tail spins he landed He was asked how it flew He replied thaat it flew so well that somebody was liable to get gay with it one of these days! He also claims that he is going to shag hammocks on the out riggers and carry passengers in competition with Casey Jones' four passenger Standards

George Wies, the flying wonder of the Fox News, tried his new landing flares out the other day Dick Depew of Fairchild Flying Service came on the field just as huge clouds of smoke came from the Oriole He called up the fire department, police department and Mitchel Field Goldy, of the Pioneer Instrument Co. started to run, not having heard from him since we must conlude that he is still running

The other day Goldy took off in his Jenny, his wheels just did clear the roof of one of the hangars On kidding George Weis about his student, he said that he had taught Goldy to do this solely to annoy W H McMullen of Curtiss Flying Service

J F Casey was out here with the Waco from the Pennsylvania Hotel, he also had something else whether or not he got that from the same place, I don't know, but it tasted pretty good He said, after paying for the plane to be brought out here, that the races gave him a headache, it may have been the races, and then again—who knows?

Sunday whilst J. P Andrews was instructing a student in the art of flying, he lost the top of the stem on one of his intake valves, he tried to make Curtiss Field, not having one of Merrill's multiple zoomers with him he had to land at Mitchel Field George Weis was sent after him in a four passenger Standard. Andy got in with a great deal of trepidation, it being the first time in 35 years that he has been in a plane as passenger After taking off he tried to climb out, not wanting him to get hurt O'Shay and I held him till we got a little higher

We have a new parachute jumper out here Ray Moore left for the real estate state, so Brundage the only sign writing parachute jumper in captivity is doing his stuff Our hero also enjoys the distinction of being the only one to make cross country trips in a parachute. Smee his last jump he has been dodging the claim agents of the various traction companies who are trying to collect damages for the wires, etc., knocked down

San Diego

The San Diego Airport, under new management, has things all sanded up and is quite a good looking place now. Not since Al Wilson sold his last wind making machine to Universal Studios has there been such a roar of motors, and such a lot of props doing r.p.m. With the addition of a Barling Bomber (Boeing 3 place OX5) Pursuit plane the Airport is now ready for the winter tourist trade. Witzki, one of the Airport's students even had his Jenny up yesterday which clinches the old argument that anything will fly in San Diego, if you give it half a chance—its's the climate.

Tobin has his Jenny all painted up now, it looks pretty but it came near getting washed out the other day It made one of those 5-6-7-6 sylinder take-offs After holding up to about 50 ft for two miles Tobin comes to some high tension wires, the Jenny would not go up and there was no place to come down but Tobin fooled everybody by making a vertical bank turn and staggering back into the field with a tail wind.

Peoria News

Just as we were complimenting ourselves upon having a suitable Airport at last, we were rather dismayed to read in one of our Peoria newspapers that we had no flying field as yet It seems that the reporter had repeatedly heard of The Varney Airport, but had somehow never associated it with a flying field

If the number of ships which have been coming through Peoria during the last few weeks is any indication of Aerial progress, we are certainly progressing at a rapid pace

During the cold snap last week a visitor at the field saw one of the students removing a propeller from a Jennie, and was heard to remark to his fair companion, "You see they take the fan off during the winter"

Pie Voight soloed in his new OX Standard last week, landing it with graceful leaps and bounds. Everyone at the airport is beginning to prepare for winter So far as is known the Varney Aircraft Co., is the only outfit which will operate through the winter They will operate their winter flying classes as they have done for the past three winters.

Mr Varney reports that the company's red Jenny has gone into the show business. The Gifford players are using it at the Orpheum this week in their play, 'The Broken Wing' (she'll probably fly around with her nose up in the air when she gets back.).

Florida

The Florida Aviation Camp, Inc., of Hialeah, report that they have started moving to a larger field and have stopped flying for a few weeks, pending the construction of new hangars and overhauling of planes. When in operation the company employs two pilots, who are also mechanics, a field manager and two salesmen and other helpers

Consolidation in German Air Transport

Negotiations are going on for merging the German Aero-Lloyd Co and the Junkers Airways for the purpose of redncing the general costs of air travel by eliminating competition

Aero Lloyd circles hail the proposition as essential for economy and efficiency, one official of the company saying:

"Three years ago when the North German Lloyd, the Hamburg-American Line, the General Electric Company, the German Petroleum Company and the Deutsche Bank consolidated their aerial interests in the Aero-Lloyd, the Junkers Company was invited to join the combination

"Since that time reciprocal relations have been established in virtually all European countries with Government-subsidized air lines, but unfortunately the Junkers Company has declined to enter until now."

At the Junkers works it was stated that the negotiations are only in a preliminary stage and that pressure for fusion was being exerted chiefly by the Federal Ministry for Communications

London-Paris Fare Cut

The Imperial Airways have announced a reduction on their Paris London run of from six guineas to five for a one way trip and from eleven to ten guineas for the round trip. This brings the fare down to about ten cents per passenger mile.

New Catalogue of Consolidated Training Plane

R. W. McGuffie of the Field Service Section, Fairfield Air Intermediate Depot, recently returned from the Consolidated

Aircraft Corporation at Buffalo, N. Y., where he compiled the data for a parts list and catalog of the PTI airplane which is being manufactured for the Air Service.

PT means Primary Training. It is the intention of the Chief of Air Service that the PTI shall be the means of training our future pilots. Thorough tests have shown the airworthiness and adaptability of this new plane for training purposes, and its many good qualities commend it to pilot and student alike.

The wings and ailerons are of wood construction, but the fuselage, empennage and landing gear, as well as the engine mount, are built of steel tubing. The front and rear sections of the fuselage are held together by twelve bolts, in addition to the rods. The gasoline tanks and the altimeter are located in the center section.

Reports of the Weather Bureau

A bulletin has been issued by the Weather Bureau regarding reports furnished to aviators, which reads in part as follows:

"Conditions which are unusual or dangerous to fliers receive prompt attention at the Washington forecasting station and at each of the district forecast centers—Chicago, New Orleans, Denver and San Francisco. Radio service is supplied twice daily for the benefit of marine and aviation interests on the Atlantic and Pacific Coasts. Weather bulletins and forecasts are broadcast from the Arlington (Va.) Naval Radio Station at 10:30 a. m. and at 10:30 p. m. They consist of reports on surface conditions and upper air data based on the regular 8 a. m. and 8 p. m. observations of the Weather Bureau.

"These bulletins include any reports received too late for the regular morning or evening forecast, and as a second feature summarize general atmospheric conditions, barometric readings at high and low centers, wind and weather forecasts for offshore areas, storm warnings and flying weather forecasts, for each of six aviation zones. During the hurricane season additional ship reports are received by radio from the Gulf of Mexico and the Caribbean Sea and distributed in connection with this service.

"Specific and more detailed forecasts are made each morning and evening for definite flying routes, to supplement the zone forecasts distributed by radio. These routes include the model airway and many routes, such as Washington to Long Island, Washington to Norfolk, Washington to Dayton and Rantoul to Detroit."

Two New Records

Fernand Lasne, a French airman, lowered on Sept. 12 the world's speed record over 1,500 and 2,000 km. distances, hitherto held by Lieut. Harold R. Harris.

Lasne, flying a Nieuport Delage machine, with a 500 hp. Hispano Suiza engine, covered the 1,500 km. over the Etampes-Marmogne circuit in 6 hr. 51 min. 17 sec., an average speed of 218 km. 827 m. an hour. He made the 2,000 km. distance in 9 hr. 8 min. 32 sec.

Lasne now holds four world records for speed.

N. Y. University Aeronautics School

Orville Wright has accepted the chairmanship of the Advisory Committee for the Daniel Guggenheim School of Aeronautics of New York University at the invitation of Chancellor Elmer Ellsworth Brown, according to a recent announcement. Harry F. Guggenheim, son of the founder of the new school, is acting as vice-chairman.

Plans for the new school, drawn up this summer by the authorities in charge, have been submitted to twenty authorities in aviation, including heads of government departments and members of the important commercial aviation concerns in the United States and these plans have met with general approval. While many valuable comments have been received, both for the curriculum and the laboratories, the plans have not been changed in detail.

Ground for the new building on the campus at University Heights will be broken before winter and the school will be ready for operation next year. The new laboratory will be equipped with a wind tunnel, nine feet in diameter, in which air velocities of more than 100 m.p.h. will be attained.

UNITED STATES AIR FORCES

Crissy Field

The work of repairing drains and resurfacing Crissy Field will start about October 15, 1925, and will require approximately six months to complete. During this time the landing room at Crissy Field will be very restricted.

It is requested that all aviators of the Army, Navy and Marine Corps, and civilians be cautioned to carefully examine Crissy Field from the air before attempting to land, and, under no circumstances, to schedule a flight to Crissy Field, which will require a landing after dark during this period. That part of the field which is unfit for use will be outlined by red flags.

Brooks Field

The Commanding Officer, Brooks Field, reports that an oil derrick has been erected on the southern boundary of Brooks Field, at right angles to the large dirigible hangar. This derrick forms an obstruction in landing and taking off from the southern end of the airdome and visiting pilots are advised to keep clear of it when approaching from the south. Landings and take-offs may, however, be made on either side of the tower. The tower will be adequately marked so as to be seen during the day, and will be marked by a red light at night.

Airman Charged with Goose Killing

Lieutenant Fred C. Nelson of the Army Air Service faces arrest on a charge of "driving, killing and capturing a Canadian goose from and with the aid of an airplane."

The unusual charge was filed by Federal Game Warden Barmer, after complaint of citizens of Callaway County. A Federal warrant, it is said, has been issued for the aviator.

It is alleged that Lieutenant Nelson was flying with a passenger on Oct. 31, 1924, when he drove his plane into a flock of geese, the propeller knocking one of the birds to the ground. It is further stated that, in landing to recover the goose, the plane was damaged. As Missouri game laws do not cover the case, Federal authorities were called in.

Lieutenant Nelson is an instructor for the 110th Air Squadron of the Missouri National Guard.

Col. Mitchell Donates Award

One thousand dollars awarded to Colonel William Mitchell by the magazine Liberty, was turned over by Mrs. Mitchell to Mrs. Zachary Lansdowne, widow of the Commander of the Shenandoah, to be divided among the women whose husbands were killed in the wreck of the airship.

The award to the Air Service officer was made as a result of his criticism of War and Navy Department officials for which he now faces court-martial.

Army Air Orders

First Lt. Benjamin F. Griffin, A.S., Marshall Field, to temporary duty instructor Missouri Nat. Guard, Omaha, upon completion of such duty to Anglum, Mo.

First Lt. Fred C. Nelson, A.S., St. Louis, to Marshall Field.

Sec. Lt. Harry Clark Wisehart promoted to First Lt.

Maj. John Hawley Larned, A.S., Res., Philadelphia to active duty Washington, reverting to inactive status Nov. 8.

Relief of Maj. Millard F. Harmon, jr., A.S. from assignment Bolling Field, and his detail as member Gen. Staff Corps, and assignment with War Dept. Gen. Staff is announced.

Capt. Lorenzo L. Snow, A.S., Bolling Field, to New York City, sailing Jan. 6 via Govern. Transp. to Hawaiian Dept.

Capt. Karl H. Gorman, A.S., duty Langley Field upon completion of tour of foreign service.

U. S. NAVAL AVIATION

Investigation of Aviation Personnel Questions

A special board was appointed by the Secretary of the Navy to study naval aviation personnel problems on October 1. It develops that the board was appointed as the result of a recommendation that came up from the Bureau of Aeronautics. It is also known that the General Staff of the Army is studying the question in the War Department.

The Secretary of War on a number of occasions has stated that the question of abolishing flying pay is not under consideration in the General Staff. The special board in the Navy Department has been instructed to go into all of the problems connected with aviation as they relate to its personnel and make a report to the Secretary before Congress convenes.

In the war Department there is a proposition under consideration which would give officers in the Air Service credit for the time that they served as flying cadets. Even the short period of nine months credit would make a great deal of difference in the standing of the Air Service officers who came in the Army under the reorganization. A few days time often changes the position of officers on the promotion list. Air Service personnel legislation will be a burning issue before the Military and Naval Committees, and the authorities are preparing to submit data on the subject.

Navy Air Orders

Lt. Calvin T. Durgin det. Bu. Aero to Aeron. Eng. Lab., Nav. Aircraft Fact., Phila.

Lt. Andrew C. McFall det. Aircraft Sqdns., Setg. Flt., to Staff Aircraft Sqdn., Setg. Flt.

Lt. (jg) Charles Bell det. Nav. Air Sta., Pensacola, Fla., to U.S.S. Galveston.

Gun. Bernie H. Jarrett det. U.S.S. New York to Torp. & Bomb. Plane Sqd. One, Aircraft Sqdns., Setg. Flt.

Lt. Comdr. Charles T. S. Gladden det. Rec. Ship San Fran., Calif., to Aircraft Sqdns., Battle Flt.

Following officers det. Nav. Air Sta., Pensacola, to stations indicated: Lt. John A. Terhune, U.S.S. Mexico, Lt. Clifford H. Alvord, to U.S.S. Reno, Lt. (jg) Mellish M. Lindsay, U.S.S. Langley, Harry T. Smith, U.S.S. Hannibal, Walter F. Weidner, U.S.S. S-1, Ensigns Harry R. Carson, U.S.S. West Virginia, James C. Guillot, U.S.S. West Virginia, Richard M. Scruggs, U.S.S. Farquhar, John D. Shaw, U.S.S. Henshaw, Lt. Winfield S. Cunningham to Aircraft Sqdns., Setg. Flt., Lt. James B. Sykes to Aircraft Sqdns., Setg. Flt. Lts. (jg) Roy A. Darron Aircraft Sqdns., Battle Flt., John P. Heath, Aircraft., Setg. Flt., Roland P. Kaufman, Aircraft Sqdns., Setg. Flt., Thomas G. Murrell, U.S.S. Cincinnati, John L. Pratt, Aircraft Sqdns., Setg. Flt., Ensign Gilbert R. Crowther to Rec. Bks., Hampton Rds.

Following officers det. Nav. Air Sta., Pensacola, to Aircraft Sqdns., Battle Flt.: Lt. Robert C. Warraek, Lts. (jg) Frank Akers, John W. Harris, Robert F. Hickey, Harry F. MacConsey, Herbert E. Regan.

Following officers det. Nav. Air Sta., Pensacola, to Aircraft Sqdns., Setg. Flt.: Lts. (jg) William P. Davis, John M. Hoskins, Michael Kernodle, Addis D. Nelson, Alan R. Nosh.

Ens. Alvin D. Chandler det. Nav. Air Sta., Pensacola, to Rec. Bks., Hampton Rds.

Ens. Herbert M. Westcoat det. Nav. Air Sta., Pensacola to temp. duty Nav. Trng. Sta., N.O.B., Hampton Roads.

Comdr. Albert C. Read det. Asiatic Sta., to Aircraft Sqdns., Battle Flt.

Ch. Mach. Shine S. Halliburton det. Nav. Sta., Lakehurst, to Aircraft Sqdns., Battle Flt.

Lt. Comdr. Charles E. Rosendahl det. U.S.S. Shenandoah to Nav. Trn. Sta., Lakehurst.

Lt. Frederick Meyer det. Com. Nav. Air Sta., Cape May, to continue treat. Nav. Hosp., L.I., Phila.

Lt. (jg) Charles E. Bauch det. U.S.S. Shenandoah to Nav. Air Sta., Lakehurst.

PUBLISHER'S NEWS LETTER

Weather has played havoc with the aircraft meet schedule for this fall. Beginning at Detroit, rain made Ford Airport a sea of mud, rain and wind followed the air tourists almost continuously around the two thousand mile circuit, becoming so severe that there was a delay at the finish of one day, making Sunday instead of Saturday the day of welcoming, at New York a hurricane made postponement necessary for the Friday and Saturday races which included the Pulitzer, Mitchell Trophy and other important events, at Baltimore, the climax of ill-luck was reached when, at the period of the year when Indian Summer was expected to afford perfect flying conditions, an October of rain and wind set in which prevented to a great extent the carrying out the program for the Schneider Cup races

* * * *

The English and Italian contestants arrived in good season for ample preliminary testing of their seaplanes. In England, week after week of bad weather had prevented the full testing of the British entries. The beautiful fall weather usually in evidence in the United States was relied on for a final testing and tuning up of the newest creations of water aircraft. But rain and wind up to the day of the navigability tests prevented any testing, except one or two flights that gave no fair chance to those in charge of the seaplanes the much desired opportunity of readjusting the planes or engines. The Army and Navy entries suffered even greater hardships. Until they were put in the water for the navigability tests, two of the seaplanes had never been in the air with pontoons. The ill-fated Supermarine S4 was damaged slightly by the center pole of one of the tents becoming untied from its holdings and in its fall brushing the tail surfaces. Fortunately repairs were quickly made.

* * * *

While the day for the navigability test was perfect both as to sea and weather, the day of the race brought rain, followed by wind, that upset, once more, all the plans and program. To those who follow the meets, the delays had become disheartening, but for the officials who were in charge, the constant uncertainty nearly caused despair. Out of the experiences of this year should come some very definite changes in arrangements for the holding of scheduled aeronautical events. The first that should be considered is the financial problems involved. When a city applies for a meet it usually has to give financial guarantees which are provided by local friends of aviation on the assumption that the "gate" will provide all or a large part of the expenses. Usually a few men have to shoulder the responsibility for the successful completion of the financial program. When inclement weather makes changes necessary—particularly when the main event is planned for Saturday, a situation arises which should always be considered in the future with the greatest seriousness.

* * * *

As is well known, the Army and Navy will not participate in Sunday exhibitions. This has been attempted once or twice but the guardians of the Sabbath have made it so unpleasant for the Departments that there is little probability of the decision ever being changed. This means that whenever government planes participate in races the postponement has to be made until Monday, with the consequent falling off of the gate receipts. In the case of the Ford Reliability Tour, Sunday had to be the finishing day, in spite of Mr. Ford's well known objection to holding celebrations on this day. The Baltimore Flying Club had foresight enough to secure a $10,000 rain insurance policy which made the postponement less a losing misfortune than it might have been.

* * * *

At Baltimore, a further complication arose. The foreign teams and the friends who came with them had planned to return by steam ships sailing shortly after the date scheduled for the contest. Busy American visitors and distinguished guests also had plans that could not be rearranged, so that the postponement of two days not only made the problem difficult for the local people but particularly for the visitors from overseas. The only way, obviously, to overcome such over Sunday delays, is to plan to hold aeronautical events of prime importance as technical contests rather than race meets where the financial side may have to be given undue consideration. Next year, the Schneider Cup Races should be held on some other days of the week than Friday and Saturday so that a delay will not mean, as in the case of Baltimore the sealing of the planes on Friday morning and keeping them in this condition three or more days. If the Contest Committee of the N.A.A. has not learned the lesson of delays this year, then the local clubs should take it upon themselves to guard against any large expense that is turned into a loss through the well known difficulty of getting the public to attend meets on Monday.—L.D.G.

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WANTED: K-6 and C-6 motors and parts; price must be low. Robertson Aircraft Corporation, St. Louis Flying Field, Anglum, Mo.

FOR SALE: One brand new Curtiss Seagull with C6 or K6 motor, set up and ready to fly. Curtiss Metropolitan Airplane Co., Port Washington, Long Island.

WANTED—Seagull or M. F. hulls. With or without surfaces. Also K-6 and C-6 Liberty 6 motors. State full particulars and condition in first letter. Harry Rogers, Curtiss Field, c/o A. C. McNamee, Garden City, L. I., N. Y.

FOR SALE: Twenty-four inch Navy searchlights, type H C, fifty ampere, one hundred twenty-five volts, manufactured by the General Electric Company. Southland Jobbing House, Norfolk, Va.

WANTED: Wright E4, 200 hp complete, rebuilt or new, wire lowest cash price. Must be guaranteed. State history of motor and hours used. R. P. Applegate, Palm Beach, Fla.

Large corner lot, four (4) room house and garage, Ft. Worth, $580.00 paid. Balance $900.00. Trade for Jenny or Standard, preferred. Might give some cash difference. W. Singleton, Inslet, Texas.

FOR SALE: 3 Avros, 2 T Mks, English Bristol, S.V.A., 20 Sims Mags. $50.00 lot. 2 eight cylinder 60 hp. Hall Scotts, 260 lb. $250.00 or $400. both. 130 hp. Special XX6, Sims Mags, New Kirkham valve action, new 3-ring pistons, heavy wrist pins, etc. Sacrifice as I will not be able to fly soon account of crash at races. C. D. Chamberlin, Hasbrouck Heights, N. J.

WANTED: M. F. or Sea Gull, 3-place flying boat, with or without engine at reasonable price. Time Saver Airways, 1035 Lake Drive, S. E., Grand Rapids, Mich.

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FOR SALE: Special built, five passenger airplane, LS5 design, brand new, motor has had 25 hours, $2500.00. Porterfield Flying School, 1733 McGee, Kansas City, Mo.

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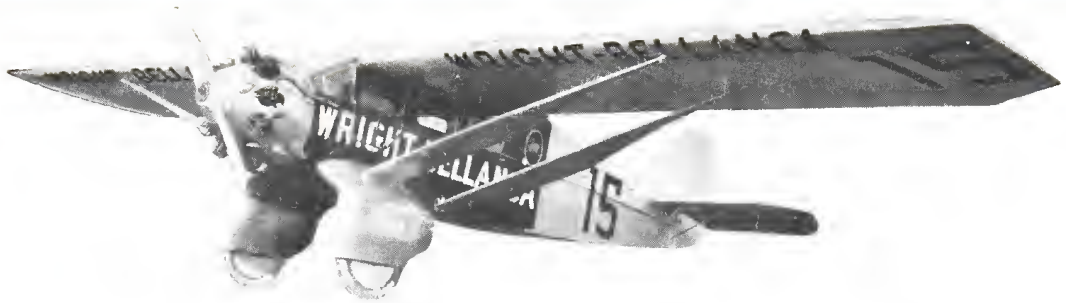
FOR SALE—Laird Swallow A-1 condition, at sacrifice. Address Box 393 Aviation.

BARGAIN—Thomas-Morse Scout, practically new, 3 hours flying, new 80 Le Rhone motor—$500.00. Fred Wehrhan, 17 Bergenline Avenue, Union City, N. J., Phone 6351 Union.

FOR SALE: AC Bar Type Spark Plugs, lots of 1000 12½c, less quantities 15c, Bethlehem Ponsot Spark Plugs, lots of 1000 7½c, less quantities 10c. Various other makes of French Spark Plugs. Low compression Liberty Pistons $2.50 each; Liberty Piston Rings 12½c each; Hisso Piston Rings 12½c each, Hall Scott Piston Rings 10c each. All prices are FOB Norfolk. Southland Jobbing House, Norfolk, Va.



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WRIGHT AERONAUTICAL CORPORATION

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